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ABSTRACT

Although performance on the Scholastic Aptitude Test (SAT) and the American College Test Program (ACT) indicates that Wisconsin's students are superior to those of other states, a more thorough assessment reveals that the state does not compare well with its neighbors either on the general level of academic preparedness or in efforts to develop the abilities of outstanding students. A study of performance on, and use of, national standardized tests indicates that the state is threatened by an internal "brain drain" that restricts the educational opportunities of Wisconsin students and encourages the most academically talented to leave the state. The following findings are discussed: (1) since relatively few Wisconsin students take the ACT and SAT, it is misleading to compare Wisconsin's seemingly high ranking with states having much broader participation; (2) the testing environment in Wisconsin differs from that of other states because ACT and SAT results are not required for admission to the University of Wisconsin; (3) high school juniors in most other states outperform those from Wisconsin on the Preliminary Scholastic Aptitude Test (PSAT), which is administered under more uniform and comparable conditions and is taken by a high percentage of college-bound juniors; (4) strikingly few Wisconsin high school students take part in the nationally recognized College Board Advanced Placement Program; (5) Wisconsin compares unfavorably with neighboring states in efforts to identify students with exceptional potential and accelerate their coursework, such as the Talent Search program; and (6) significant numbers of the most able Wisconsin students leave the state for higher education elsewhere. Statistical data are included on six graphs. A list of 36 references is appended. (FMW)

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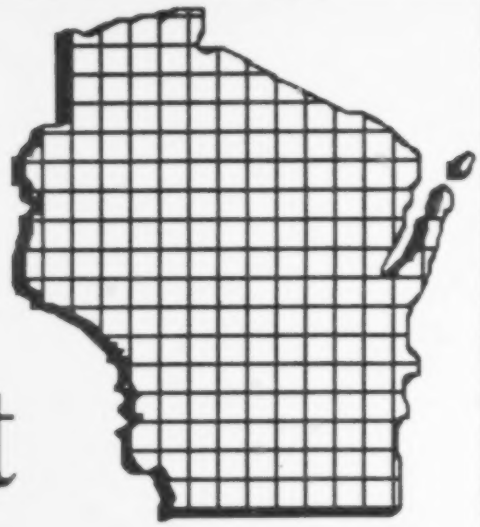

May 1988 Volume 1, No. 2

WISCONSIN'S INTERNAL BRAIN DRAIN

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Report from the Executive Director:

In the Wisconsin Citizen Survey (February, 1988), we found that 75% of Wisconsin residents thought that public education should allow students to reach to their full potential, but only 21% felt that Wisconsin's current public education system was designed to reach this goal.

The Wisconsin Policy Research Institute's Board of Directors commissioned a study to determine if Wisconsin's brightest students were being challenged in our public schools.

We commissioned The Johns Hopkins University Center for the Advancement of Academically Talented Youth (CTY) to do the research.

CTY has emerged during the last decade as a national and international focal point for the education of highly talented youth in mathematics, the sciences and the humanities. Its activities were applauded in the national report *High School* (Ernest Boyer, Carnegie Foundation for the Advancement of Teaching, 1983) as "Among the most extraordinary efforts to reach youngsters on the. . .precollegiate level by a university." Most recently, it was cited as "the premier program and national model for those collaborations that directly organize and staff college-level courses for talented pre-college age youth".

Since 1979, CTY's Regional, National, and International Talent Searches have identified more than 150,000 highly able students. The Talent Search identification process relies on standardized tests, particularly The College Board's Scholastic Aptitude Test (SAT). Those students who as seventh graders score at least as high on the SAT as the average college-bound, high school senior are eligible for CTY's Summer and Academic Year Programs.

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Dr. William Durden is the Director of CTY and author of this study. Dr. Durden has an international reputation for his work. He has worked as a consultant to the U.S. State Department, a number of states such as Florida, New York and Maryland, and conducts summer programs for gifted students that draw young people from all 50 states, the District of Columbia and numerous foreign countries. In addition, Dr. Durden has developed a national data base on gifted programs, the only one of its kind in the United States.

We are fortunate to have someone of Dr. Durden's expertise available for this important study.

James H. Miller

Wisconsin Policy
Research Institute Report

WISCONSIN'S INTERNAL BRAIN DRAIN

by William Durden, Ph.D.

Director, Center for Advancement of Academically Talented Youth

The John Hopkins University

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INTRODUCTION

For a strong future, Wisconsin must develop fully the educational potential of its youth and retain the most talented as future state leaders.

These goals are not being met sufficiently. In several important measures of achievement, college-bound Wisconsin students rank well behind their peers in other states. Among the most gifted Wisconsin students, significant numbers leave for higher education elsewhere.

Educators, parents, and elected officials confront three challenges. First, they must discard the unwarranted complacency and self-satisfaction which exists in many quarters as to the effectiveness of the state's schools. Second, they must address what amounts to an internal brain drain, with too few of the state's college-bound children reaching full potential. Third, they must determine if, as some perceive, Wisconsin also is witnessing an external brain drain, with a disproportionate share of talented high school seniors leaving the state.

An overview of current Wisconsin attitude and practice reveals misguided assumptions and inaction in the face of these challenges. This stands in contrast to neighboring states of Michigan, Minnesota, and Illinois, as well as numerous others where the educational system is seen as the focus of fundamental reform for meeting future social and economic challenges.

One explanation for Wisconsin's circumstance is complacency. This is based on indicators of educational achievement which might lead one to conclude that Wisconsin students are superior to those from most other states. These supposed indicators of high achievement are test results from the College Board Scholastic Aptitude Test (SAT) and the American College Test Program (ACT).

A more thorough assessment reveals a conflicting conclusion to that offered by SAT and ACT test scores. Further, in the context of efforts which characterize other states' activities, Wisconsin does not fare well either in the general level of academic preparedness nor in its efforts to match its brightest youth with opportunities to foster emerging talent at an early age. These opportunities include: College Board Advanced Placement programs; gifted and talented initiatives; college-school partnership programs; and other special education initiatives.

SUMMARY OF FINDINGS

The conclusions and recommendations advanced in this study are premised on the following findings:

1. Relatively few Wisconsin students take the ACT and SAT tests. It is therefore misleading to compare Wisconsin's seemingly high ranking with states having much broader student participation .

a. Less than half of the state's graduating seniors take the ACT test. Of the 28 states using the ACT as the primary test, only five have a lower participation rate.

b. Only 14.6 % of Wisconsin's seniors take the SAT test. In 33 states and the District of Columbia, the rate is higher. In 18 states and the District, more than 50% participate.

2. The testing environment in Wisconsin differs from several other states, because ACT and SAT results are not required for admission to the University of Wisconsin. The tests instead are used by the UW for placement and purposes other than admission. Accordingly, they can be taken late in a student's senior year–or even after graduation–meaning that Wisconsin students taking the tests likely are older than in states where earlier test participation is needed. These Wisconsin students have the added advantage of knowing that the outcome of the test won't affect college admission, so they don't face the same pressure as students from many other states.

3. High school juniors in most other states outperform those from Wisconsin on the College Board's Preliminary Scholastic Aptitude Test (PSAT), which is administered nationally, under more uniform and comparable conditions than either the ACT or SAT. Because the PSAT also serves as the National Merit Scholarship Qualifying Test, it is taken by a high percentage of college-bound juniors seeking college scholarships and to plan the remainder of their high school education.

a. Among the 50 states and the District of Columbia, only 18 ranked lower than Wisconsin on the PSAT selection index.

b. Most of those ranking below Wisconsin are not noted for significant academic accomplishment at the elementary and secondary level.

c. Among Midwestern states, Wisconsin ranked: somewhat better than Michigan, Indiana, and Ohio; equal to Iowa; and below Illinois and Minnesota.

4. Strikingly few Wisconsin high school students take part in the nationally recognized College Board Advanced Placement Program, through which high schools establish a reputation for teaching rigorous academic subjects. Students who participate in the program tend to do very well in college. Wisconsin's low participation contrasts sharply with the many states where the Advanced Placement Program is a major part of the efforts to challenge and improve the performance of their students.

a. Among 50 states and the District of Columbia, Wisconsin ranks 46th in the percent of high school graduates who have taken at least one AP examination; Wisconsin surpasses only North and South Dakota, Iowa, Arkansas, and West Virginia.

b. The actual Wisconsin participation rate was 2.5% of graduating seniors. The rate for the average state (Arizona) is three times greater. Had Wisconsin matched that rate, an additional 3,000 students would have benefited.

c. Thirteen jurisdictions participate at a rate five times higher than Wisconsin: Delaware, Connecticut, Colorado, Massachusetts, Alaska, Maryland, Virginia, California, South Carolina, Florida, New York, the District of Columbia, and Utah.

5. Wisconsin compares unfavorably with neighboring states in efforts to identify students with exceptional potential and accelerate their coursework. One model used by many states, called Talent Search, was developed in 1971 at The Johns Hopkins University. It has had significant success, where used.

a. Unlike some states, including neighboring Illinois, Wisconsin does not conduct its own statewide Talent Search.

b. Wisconsin has available to its seventh- and eighth-graders the Midwest Talent Search administered by Northwestern University in Evanston. Wisconsin's participation is dramatically low. The table below shows what percentage of applications to the Midwest Talent Search came from Wisconsin, Indiana, Michigan, and Ohio in the last three years.

* * *

Percentage of Midwest Talent Search Applications

	WISCONSIN	INDIANA	MICHIGAN	OHIO
1985	5.9%	28.8%	36.8%	24.6%
1986	5.8	28.8	35.0	26.5
1987	4.4	24.8	36.1	28.2

* * *

6. Of the most able Wisconsin students, significant numbers leave the state for higher education elsewhere. The University of Wisconsin Board of Regents has taken initial steps to address this issue. Also, University of Wisconsin researchers are updating a 1968 study to determine how significant the "external brain drain" is. Data available now includes:

a. Of the 106 Wisconsin seniors receiving the All-State Scholar award in 1987, more than 50% enrolled in college outside the state. Of the 30 originally describing their choice as undecided, 28 eventually enrolled out-of-state.

b. The number of prestigious National Merit Scholars listing the University of Wisconsin-Madison as their first choice has dropped precipitously. In 1983, 102 chose Madison; by 1987, only 56 listed it as their first choice.

c. The higher a Wisconsin student scores on the ACT test, the more likely he or she is to attend college out of state.

CONCLUSIONS

The University's effort to study and respond to a perceived external brain drain is positive. However, it responds to a small and perhaps superficial portion of the "brain drain" issue in Wisconsin.

The state is threatened by a more fundamental and deep-rooted "brain drain," one which Wisconsin appears to not understand or be willing to combat. The threat is an internal brain drain, occurring much earlier than college and systematically restricting a high proportion of Wisconsin's bright and talented students to unspent development of their ability. By the time university study is a possibility, the damage already has been done: the maximum number of youth who could enhance the state's social, economic, and cultural development by becoming Wisconsin's most talented citizens already are unprepared.

The evidence is substantial. Taken singularly, it might seem only suggestive, but in the aggregate a definite pattern emerges. It is a statewide problem, extending well beyond the more widely recognized lack of achievement in the largest urban schools.

The state's leadership must address this situation if Wisconsin's goal of a competitive economic and social future is to be realized. The complacency associated with unrepresentative ACT and SAT test scores must be replaced with an aggressive program to lift the performance of all Wisconsin youth by setting higher standards of performance and accountability.

Wisconsin's political and educational leadership can expect support from a majority of Wisconsin citizens, who in fact appear to be more cognizant of the problem. In January, 1988, a public opinion survey was conducted by the Gordon Black Corporation for the Wisconsin Policy Research Institute.

A representative sample of 1000 Wisconsin citizens were asked:

"Do you think the goal of public education should be to attain a certain level of education for all students, or should the goal be to educate each student to his or her fullest potential?"

In response, 75% said "fullest potential" compared to 19% favoring a "certain level."

Then, the same sample was asked:

"Do you think the public education system in Wisconsin is, in fact, set up to attain a certain level of education for all students, or is it set up to educate each student to his or her fullest potential?"

In response, 61% said a "certain level" and only 21% said "fullest potential."

Finally, 80% favored creating enrichment programs designed specifically for gifted children.

As a consequence of the findings in this study, and in response to scientifically measured public opinion, the foundation exists for state leaders to initiate a radical change of attitude and practice. Otherwise, the internal brain drain will persist, resulting in the neglect and consequent loss of the state's most talented youth even before university study.

SECTION ONE
APPEARANCE OF HIGH QUALITY EDUCATION FOR WISCONSIN'S COLLEGE-BOUND YOUTH

There is a general assumption that the State of Wisconsin enjoys a high level of educational accomplishment for its children and that its bright young people are extremely well served, often in contrast to many other states. To underscore these positions, reference often is made to the scores of Wisconsin youth on the College Board Scholastic Aptitude Test (SAT) and the American College Testing program (ACT).

The Scholastic Aptitude Test (SAT) is a three-hour, multiple-choice test which measures verbal and mathematical abilities students have developed over many years, both in and out of school. The test is made up of the following sections:

- two 30-minute verbal sections that test vocabulary, verbal reasoning, and reading comprehension

- two 30-minute mathematical sections that test ability to solve problems involving arithmetic, algebra and geometry

- one 30-minute Test of Standard Written English (TSWE) that measures ability to recognize and use standard written English. A TSWE score can help a college assign a student to an appropriate English course.

- A 30-minute section of equationary questions (verbal, mathematical or TSWE). Answers to these questions do not count toward the score.

One overall verbal score is given, ranging from a low of 200 to a high of 800. One overall mathematical score is given, also ranging from 200 to 800. Subscores are also indicated. The TSWE score can range from a low of 20 to a high of 60+.

SAT scores are intended primarily to help predict academic performance of high school students in college and to assess the academic needs of individual students. SAT scores, high school course grades, and other information about a student's academic background help college admissions officers evaluate how well prepared individual students are to do college-level work. Since courses and grading standards vary widely from school to school, scores on standardized tests, such as the SAT, can help colleges compare the ability of students from different schools.

The ACT Assessment Program is designed to help students, with the assistance of their high school counselors, develop post-secondary plans and to help colleges develop instructional and extracurricular programs suited to the needs and characteristics of their applicants. ACT consists of four distinct areas: English, Mathematics, Social Studies and Natural Sciences. Scores on each section range from a low of 1 to a high of 36. A composite score is also given.

SAT and ACT scores among Wisconsin students could lead one to conclude that Wisconsin is offering its students an exemplary pre-collegiate education. For example, State Education Statistics (prepared by the U. S. Department of Education, Office of Planning, Budget and Evaluation, February 1988) lists Wisconsin as first in the nation for high school senior composite ACT scores among the 28 states for whom the ACT is the primary college-bound standardized test used by high school graduates within a state. (See Illustration 1.)

The results of Wisconsin high school seniors who take the College Board Scholastic Aptitude Test (SAT) are seemingly as impressive. Wisconsin in 1987 ranked 8th among all states and the District of Columbia with regard to combined mathematical and verbal average scores. (See Illustration 2.)

The inappropriateness of assessing Wisconsin's education system on the basis of SAT and ACT scores, however, is quickly apparent after further analysis. To evaluate the significance of ACT and SAT test scores, and particularly to compare state scores, one should know whether:

(1) the sample of students taking the test within a state is representative; and

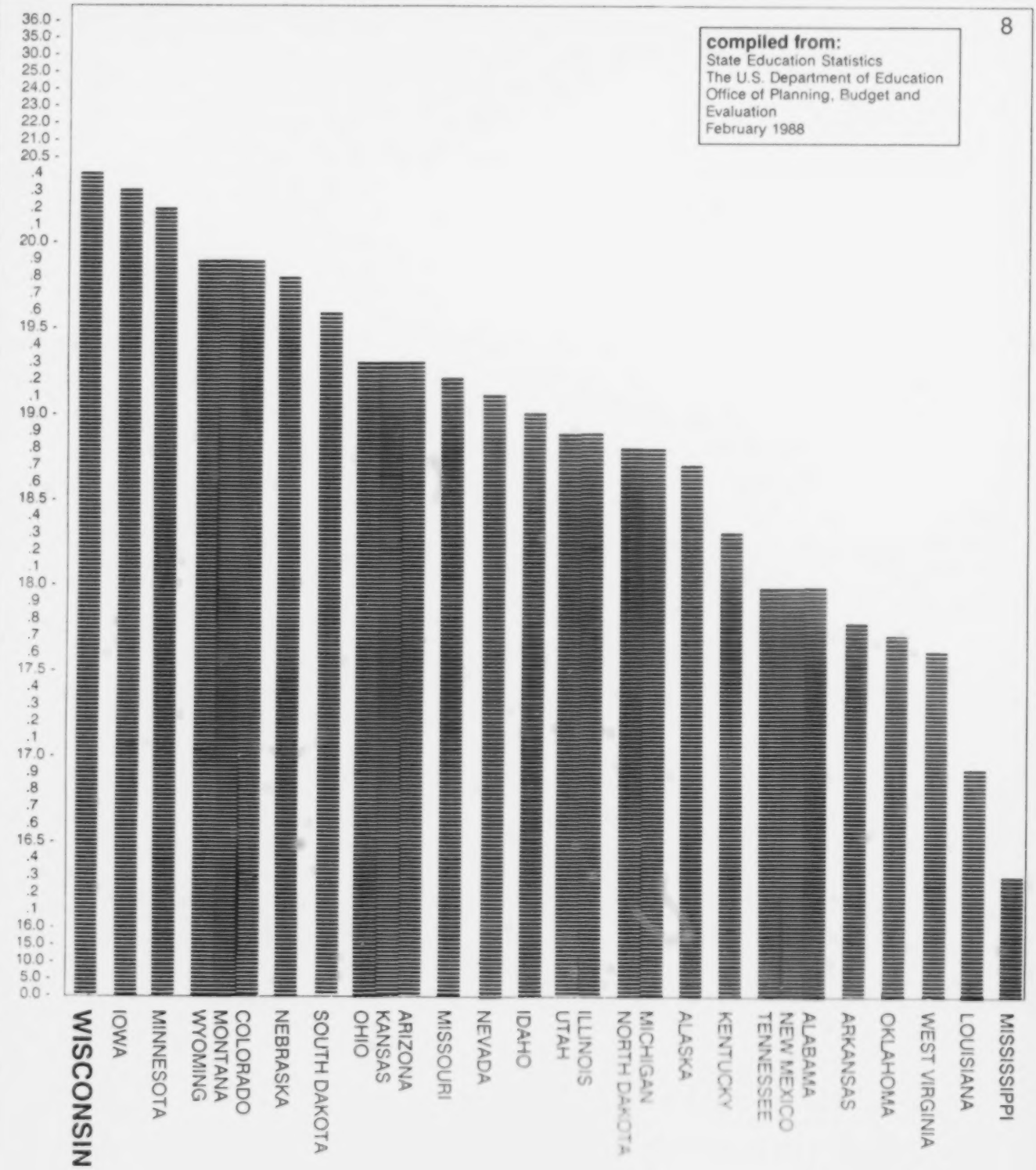
(2) the sample of students between states being compared is likely to be similar.

Measured against each of these criteria, Wisconsin's supposed superior rankings are highly questionable.

Consider first the ACT. Less than half of the state's high school seniors take the test. Given that they represent those aspiring to higher education, there is no basis to believe that the sample in Wisconsin (or in other states) is broadly representative of high school academic performance.

If the test results aren't representative of achievement within a state, can they not still be compared with other states? Decidedly not, at least where high school senior participation rate is quite high or low. It obviously would be inappropriate and misleading to compare one state's college-bound students with those in another state if the percentage of seniors taking the test differed markedly. Wisconsin's high ACT ranking, for example, must be discounted significantly by the relatively small percentage of graduates who take the test. Of the 28 states where the ACT is the primary college-bound test, only five rank lower than Wisconsin's 42% participation rate. Wisconsin is among only 6 (of 28) states where fewer than half the graduating students take the test. (See Illustration 3.)

Regarding the SAT, Wisconsin's supposed number 8 ranking is rendered almost meaningless by virtue of the fact that fewer than 15% take the test. The participation rate in 33 states and the District of Columbia is higher, sometimes several times so. (See Illustration 4.)



1987 ACT Composite Scores

ranking by state (states whose primary examination is the ACT)

Illustration 1: Composite ACT Scores by State

1987 SAT AVERAGE COMBINED VERBAL AND MATHEMATICS
SCORES BY STATE

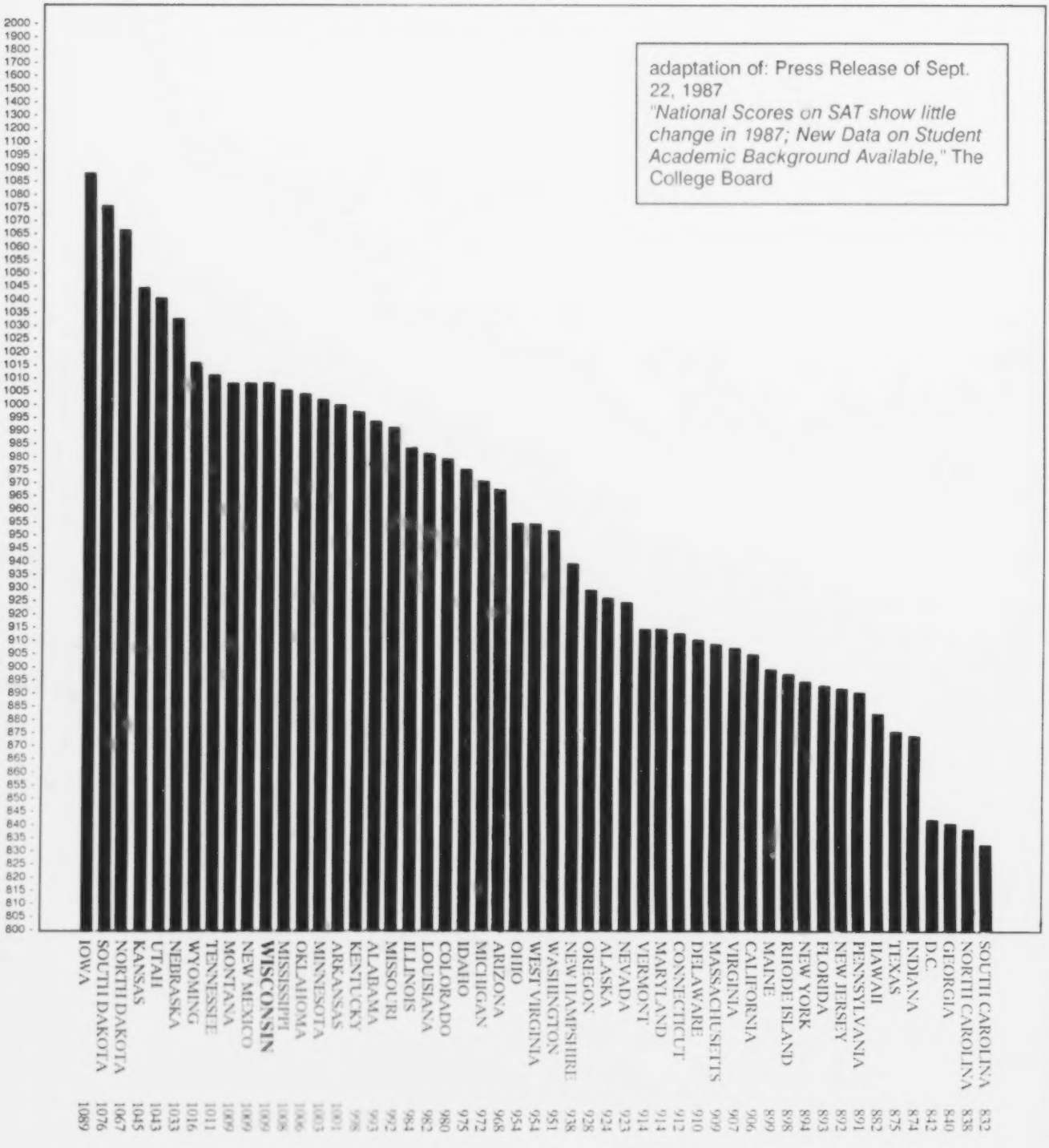
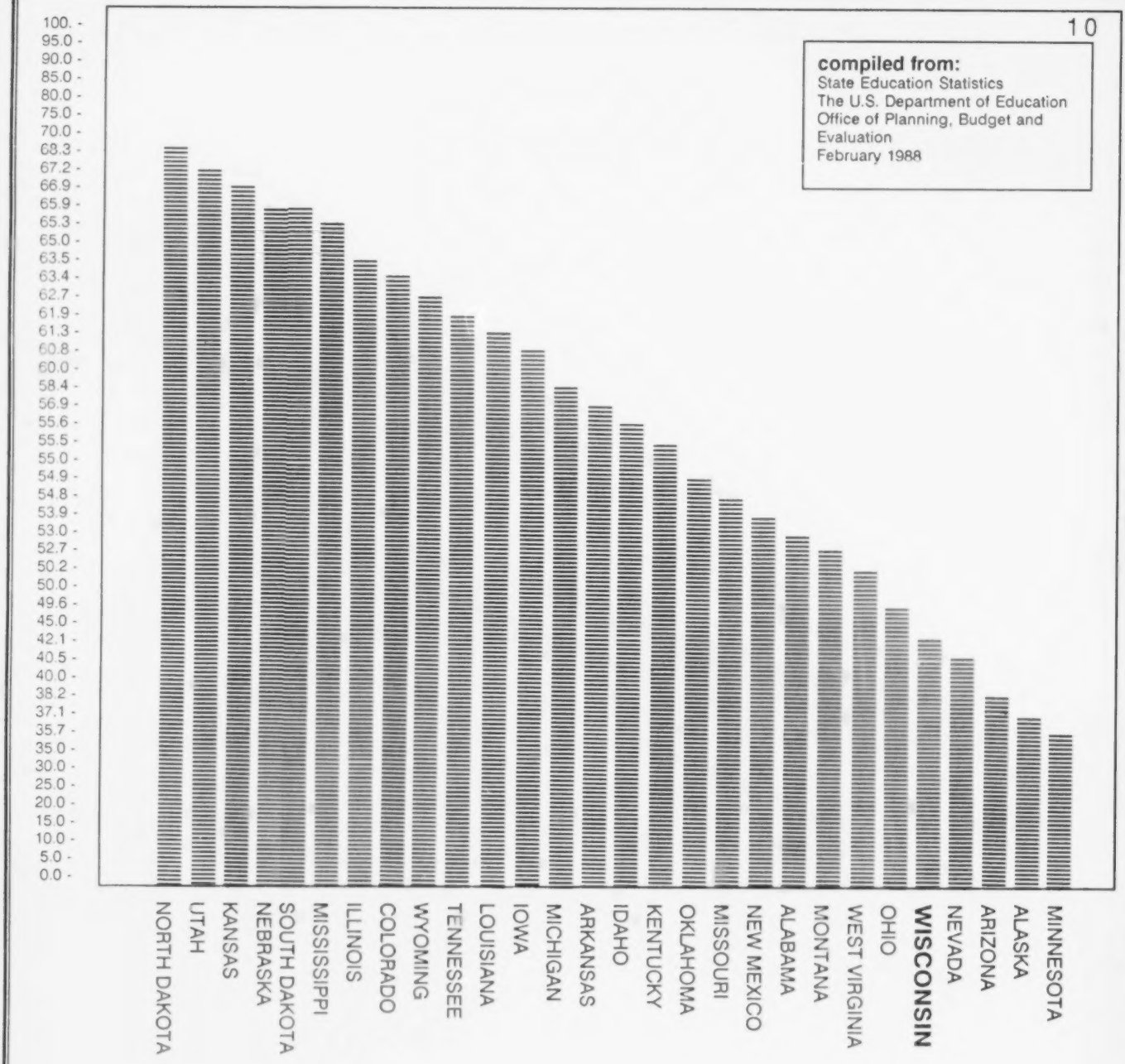


Illustration 2: 1987 SAT Average Combined Verbal and Mathematics Scores by State



1987 ACT

Percent of High School Graduates Taking Test (Est.)

Illustration 3: Percentage of 1987 High School Graduates Taking the ACT by State in Which This Test is the Primary College-bound Assessment Instrument

1987 SAT

Percent of High School Graduates Taking SAT Test (Est.)

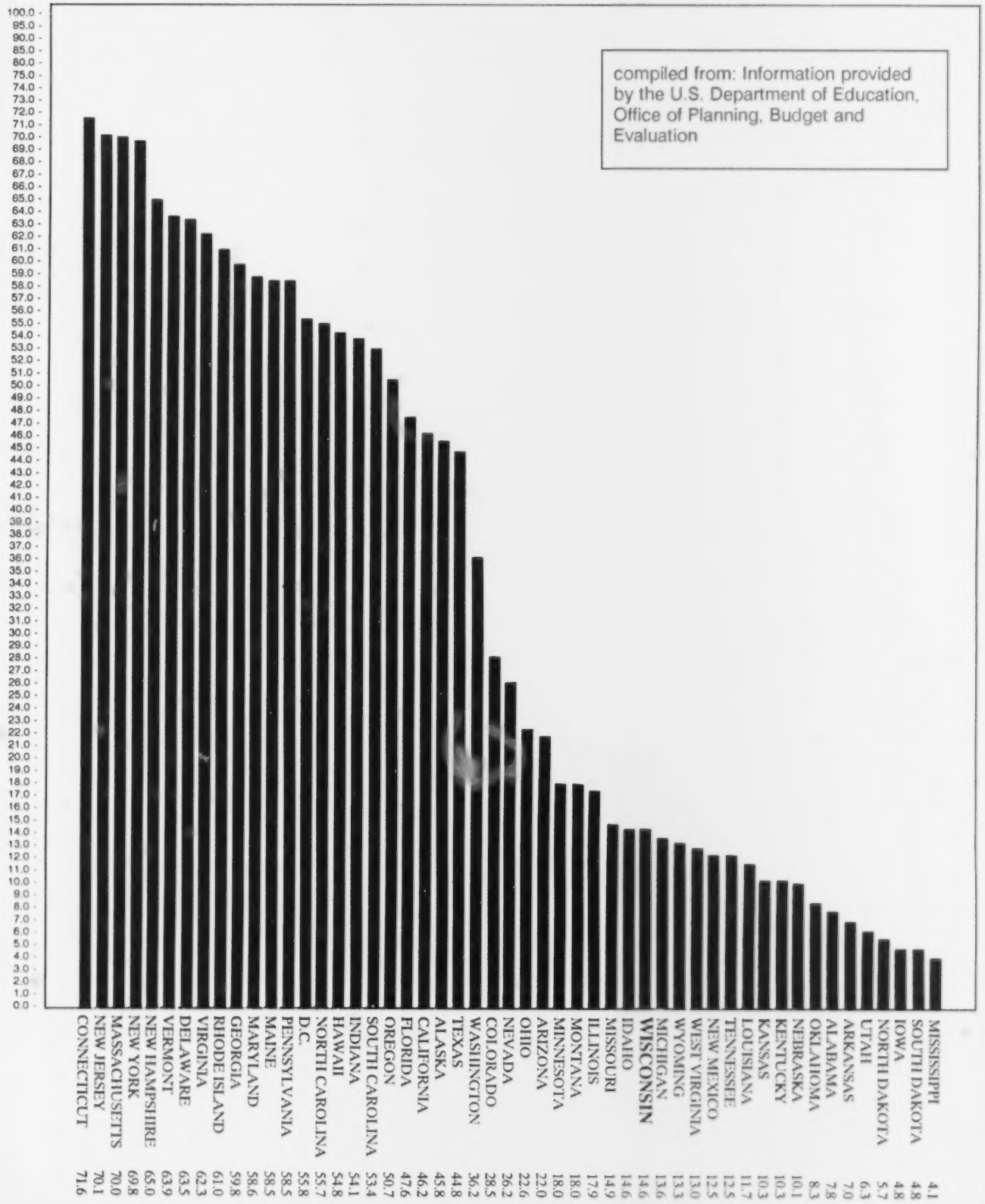


Illustration 4: Percent of 1987 High School Graduates Taking SAT Test (Est.)

Further illustrations of the unsupported complacency engendered by the ACT and SAT rankings will be discussed later.

To further understand the role and relative importance of the ACT and SAT tests in Wisconsin, one must consider that the University of Wisconsin-Madison -- the state's largest and most prestigious educational institution -- does not require either test for purposes of determining admission.Rather, the tests are used primarily for placement purposes upon admission, or as evidence of ability if standard achievement and admission criteria cannot be met. Thus, unlike many high school peers taking the tests elsewhere in the country, large numbers of those in Wisconsin face no performance pressure, because their primary choice for college will not be affected by the outcome. This environment is an enormous advantage for a Wisconsin student taking these tests, as is the fact that many are able to take them several months later than students who need them for admission purposes.

At present, then, the institutions of the University of Wisconsin System do not use the ACT or SAT as first line admission documents.

--The University of Wisconsin-Madison permits candidates to submit test scores as evidence of ability if they do not qualify on the basis of their high school record.
--The University of Wisconsin Centers have open admissions.
--The University of Wisconsin-Eau Claire requests the SAT or ACT score by August 1 for placement, not admissions.
--The University of Wisconsin-Green Bay requires the ACT score by August 15 for placement only.
--The University of Wisconsin-La Cross requires the ACT score by August 25 for placement and counseling only.
--The University of Wisconsin-Milwaukee requires the SAT or ACT if an applicant ranks in the lower half of the high school class and the SAT or ACT for the College of Engineering and Applied Science applicants by July 15.
--The University of Wisconsin-Oshkosh requires the SAT or ACT for placement and counseling only.
--The University of Wisconsin-Parkside requires the ACT score by August I for placement only.
--The University of Wisconsin-Platteville requires the ACT score by September I for placement only.
--The University of Wisconsin-River Falls requires the SAT or ACT for counseling only.
--The University of Wisconsin-Stevens Point requires an applicant to rank in the top half of a high school class or a minimum ACT composite score of 21.
--The University of Wisconsin-Stout has an open admissions.
--The University of Wisconsin-Superior admits students in the top half of a graduating class unconditionally and requires those in the bottom half to have a minimum ACT composite score of 18.
--The University of Wisconsin-Whitewater requires the SAT or ACT score by August 29 for placement purposes
(From The College Handbook: 1987-88, New York, NY: The College Board).

Clearly, any statements advanced about the quality and preparation of Wisconsin youth upon the basis of high SAT or ACT scores must be received with extreme

reservation. They in no way represent a comprehensive nor accurate commentary upon the educational status of a majority of college-bound graduating seniors in the state. The relatively small number of Wisconsin students who take the SAT or ACT do so principally for placement or counseling requirements at in-state institutions or application to in-state private or out-of-state public and private schools that actually require these examinations for admission.

SECTION TWO
A DIFFERENT PERSPECTIVE:
THE PRELIMINARY SCHOLASTIC APTITUDE TEST

A different picture emerges from the results of the Preliminary Scholastic Aptitude Test/National Merit Scholarship Qualifying Test (PSAT/NMSQT), a more meaningful assessment instrument used in part as a measure of college preparedness.

The performance of Wisconsin students on the PSAT presents a far less optimistic situation with respect to pre-collegiate education for bright students.

The PSAT/NMSQT is administered nationally, on a more uniform basis and in a more comparable testing environment than either the ACT or SAT. It has much greater validity as a comparative measure of achievement among college-bound students.

The PSAT examination is an integral part of the National Merit Scholarship Program. A significant number of college-bound juniors from each state participate. They do so to become candidates for a variety of college scholarships and to assist in planning the remainder of their high school education. In 1986, 27,524 Wisconsin juniors took the PSAT. This figure is almost equivalent to the number of seniors (27,505) who took the ACT in 1986-87.

Development and administration of the test are handled by Educational Testing Service (ETS) for the College Board and the National Merit Scholarship Corporation, which co-sponsor the PSAT/NMSQT. The National Merit Scholarship Corporation was created in 1955 to conduct the National Merit Scholarship Program and through the bestowing of recognition and the awarding of college scholarship aid, NMSC has advanced significantly the academic abilities of the nation's most promising youth. Today, some 1.4 million participants have received Merit Program recognition; of these students, more than 102,500 met the rigorous standards applied in the selection of merit scholars and won awards worth approximately $310 million. News media have published thousands of success stories identifying distinguished citizens in all 50 states who have been announced as Merit Scholars, providing an incentive to other aspiring students.

The PSAT contains a verbal section and a mathematical section and requires one hour and 40 minutes of testing time. The PSAT/NMSQT measures developed reasoning abilities that relate to academic performance in college. It assesses ability to reason with facts and concepts rather than to recite them. Students are not asked to answer questions about grammar, recall facts from literature, or recognize mathematical formulas; instead, they are presented with verbal and mathematical information and asked to reason with it.

Among the reasons why schools administer the PSAT/NMSQT and why students take the test are these:

- test results indicate the extent to which students have acquired verbal and mathematical abilities important for success in college;

- test results enable colleges and scholarship programs to communicate with students who have particular characteristics;

- test results enable schools and students to identify specific strengths and weaknesses in verbal and mathematical skills as well as to analyze 20 test-taking techniques; and

- test results assist schools to identify high-ability students for accelerated or enriched courses (such as Advanced Placement courses) and, over a period of time, to estimate performance on Advanced Placement examinations.

PSAT scores are divided in two sections—verbal (with scores ranging from a low of 20 to a high of 80) and mathematical (with scores ranging from a low of 20 to a high of 80). These scores are used to derive a Selection Index. The Selection Index is two times the verbal scores plus the mathematical score. The Selection Index assists in the determination of approximately 35,000 youth annually as Commended Students and another 15,000 Semi-finalists. The Selection Index varies by state depending upon the number of high scoring students within a particular state. Thus, the higher the number of outstanding scores among juniors in a particular state the higher the Selection Index.

An examination of the Selection Index scores for all states in 1986 presents a sharply contrasting situation for those who forward the position of distinguished education for Wisconsin's most academically promising pre-collegiate youth on the basis of SAT and ACT scores. Among the 50 states and the District of Columbia, only 18 states are ranked lower than Wisconsin on the Preliminary Scholastic Aptitude Test Selection Index.(See Illustration 5.)

Caution must of course be exercised with regard to summarizing data such as that given here for the SATs, ACTs and PSATs. The data may not be appropriate measures of overall performance of teachers, schools, educational systems or states. However, such justifiable warning from the testing services which administer the SAT, ACT and PSAT does not exclude judicious comparisons which may reveal patterns for closer scrutiny.

In Wisconsin, the pattern which emerges from contrasting in-state and out-of-state results of the SAT and ACT with the PSAT examinations suggests far less of a superior academic preparedness among the majority of youth than that represented by those who refer principally to SAT and ACT results.

When this initial probe of Wisconsin's academic preparedness of its youth, to include its best and brightest precollegiate youth, is now combined with further analysis that extends well beyond standardized test scores, the ability of Wisconsin's educational system to accommodate its talented youth is further in question.

QUALIFYING SELECTION INDEX: SEMIFINALISTS
1986 PSAT/NMSQT
1988 MERIT PROGRAM

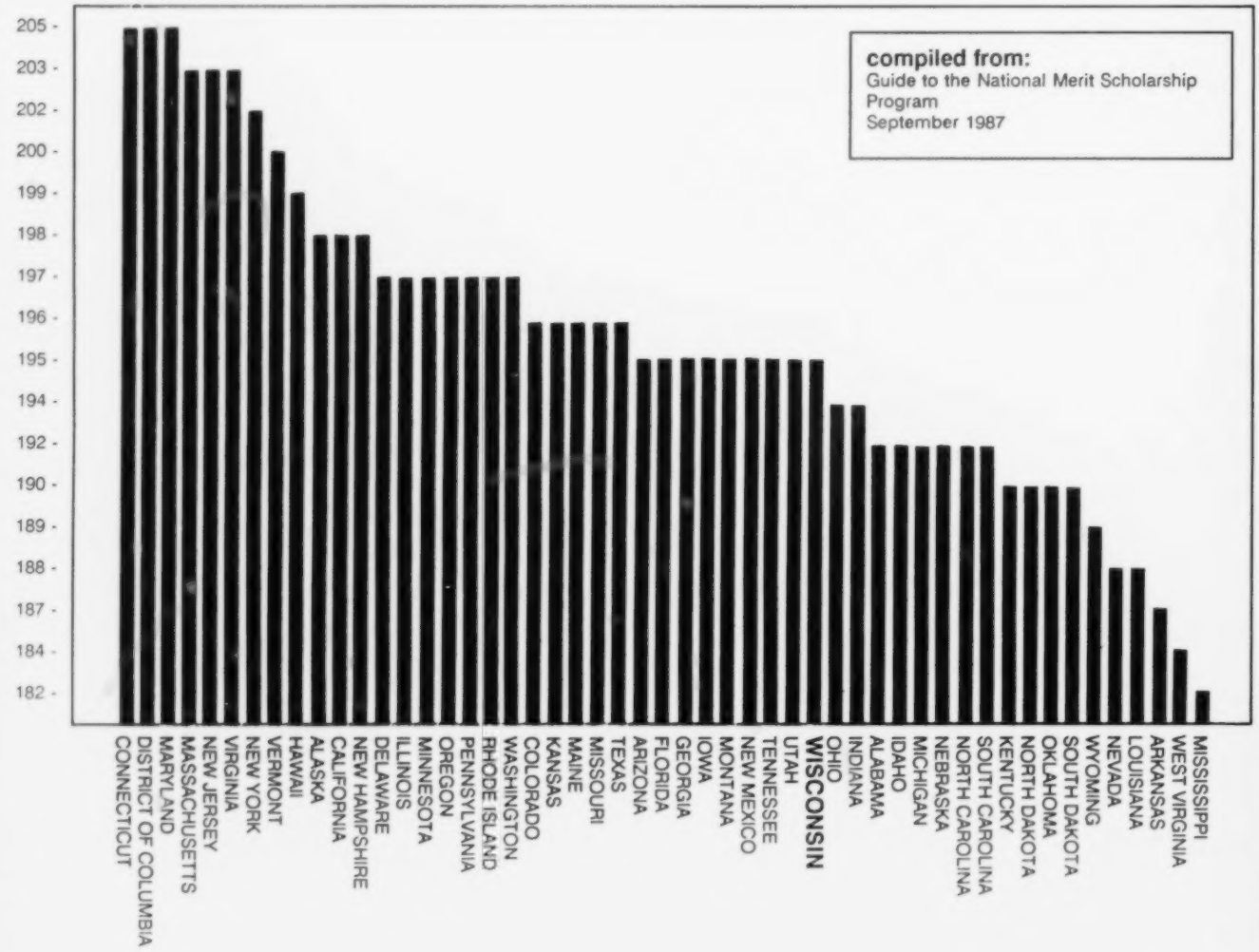


Illustration 5: 1986 PSAT/NMSQT Selection Index by States

Further data reinforces this judgement. For example, in the fall of 1987 it was revealed that 57% of entering freshmen were put in remedial, non-credit English and mathematics courses at the University of Wisconsin-Milwaukee. In a Milwaukee Sentinel article of December 12, 1987, a UW-Milwaukee official attributes the high number of students in these remedial classes to the University's "effort to improve the quality of its students." UWM now requires students to demonstrate, through testing, that they have attained college-level proficiency in English and math before becoming juniors. Shockingly, a UW-Milwaukee official states that at some other Wisconsin campuses, "students are allowed to slip by without proving proficiency." And, as an alarming commentary upon the status of precollegiate education for college-bound students in the state, UW-Milwaukee records show 174 of the 261 students placed in the basic high school math course as freshmen were in the upper half of their high school graduating class; 530 of the 751 placed in the advanced high school math course were in the upper half of their class; 57 of the 73 students placed in the basic English course were in the upper half; and 383 of the 547 in the advanced English course were in the upper half.

(Another Milwaukee Sentinel series included interviews with the top graduates of Milwaukee Public Schools in 1987. The valedictorians of each school were questioned as to their preparedness for college. The majority of these students -- by definition the best the system had to offer -- expressed disappointment with their high school preparation. Some acknowledged to be struggling in several subjects, particularly in comparison to other students.)

A Milwaukee Sentinel article of December 11, 1987, quotes Herbert Grover, state superintendent of public instruction and chairman of the Education Committee, stating that the problem is worst among minority students, but extends to students from predominantly white suburban and private schools. For example, he said, 29 of 48 UWM freshmen from St. Mary's Academy, Milwaukee, and 22 of 55 from Nicolet Union High School in Glendale were required to take remedial math courses.

The degree of inadequacy of college-bound graduates is further underscored when the content of remedial courses is examined closely. For example, a course at UW-Madison entitled "099 Algebra," begins with a review of fractions and signed numbers, decidedly early pre-collegiate skills.

Comprehensive data about the status of remedial course work among the other Wisconsin public, as well as private colleges and universities, is not as readily forthcoming. Some schools do not classify their course work as remedial; data is not necessarily kept in this particular category. However, the data cited here clearly contributes yet another challenge to the disposition that all is well with Wisconsin's preparation of its precollegiate youth.

SECTION THREE
MEASURES FOR HIGH QUALITY AMONG COLLEGE-BOUND CHILDREN AND YOUTH: A WISCONSIN CONTEXT

In April, 1983, an open letter to the American people was issued by the National Commission on Excellence in Education. Then U. S. Education Secretary, Terrell H. Bell, appointed David Pierpont Gardner to chair the Commission and to present a report on the quality of education in America. The report, A Nation at Risk: The Imperative for Educational Reform, began with this now famous and forceful warning to the American people:

> Our Nation is at risk. Our once unchallenged pre-eminence in commerce, industry, science and technological innovation is being overtaken by competitors throughout the world. This report is concerned with only one of the many causes and dimensions of the problem, but it is the one that undergirds American prosperity, security and civility. We report to the American people that while we can take justifiable pride in what our schools and colleges have historically accomplished and contributed to the United States and the well-being of its people, the educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people. What was unimaginable a generation ago has begun to occur—others are matching and surpassing our educational attainments.
>
> If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war. As it stands, "We have allowed this to happen to ourselves. We have even squandered the gains in student achievement made in the wake of the Sputnik challenge. Moreover, we have dismantled essential support systems which helped make those gains possible. We have, in effect, been committing an act of unthinking, unilateral educational disarmament. Our society and its educational institutions seem to have lost sight of the basic purposes of schooling, and of high expectations and disciplined effort needed to attain them.

In response to this dramatic statement, and in an effort to control their own rising tides of mediocrity, numerous states since 1983 have been participants in what has become known as the "educational reform movement" or the "school improvement effort." Among the steps proposed to improve the quality of education are: greater attention to core subjects, longer school days; increased pay for teachers; greater control to the individual schools, and a correspondingly more significant say in policy and practice for building administrators and teachers; a greater choice in educational plan for student and family; and initiatives to advance the college-bound student through substantive gifted and talented programs, school-college partnerships, and The College Board Advanced Placement Program.

While a complete evaluation of the success or failure of the educational reform movement is still forthcoming, an assessment of Wisconsin's commitment to a suggested "rising tide of mediocrity," especially with regard to its college-bound graduates, among them its best and brightest precollegiate youth, can be considered by the level of its involvement in such elements of the drive for quality as:

- The College Board Advanced Placement Program

- Gifted and Talented Programs, and

- School restructuring initiatives and incentive programs, to include school-college partnerships and residential honors high schools.

These elements will be considered in such a way as to compare Wisconsin with selected other states, specifically neighboring ones.

THE COLLEGE BOARD ADVANCED PLACEMENT PROGRAM

The Advanced Placement (AP) Program was begun 32 years ago as a cooperative educational endeavor sponsored by The College Board. Based on the fact that many young people can complete college-level studies in their secondary schools, it represents a desire of schools and colleges to foster such experiences. Like other programs of The College Board, this program is national, its policies are determined by representatives of member institutions, and its operational services are provided by Educational Testing Service.

Advanced Placement serves three groups: students who wish to pursue college-level studies while still in secondary school, schools that desire to offer these opportunities, and, colleges that wish to encourage and recognize such achievement. It does this by providing practical descriptions of college-level courses to interested schools and the results of examinations based on these descriptions to the colleges of the students' choices. Participating colleges grant credit and/or appropriate placement to students who do well. Thus, the Advanced Placement Program extends the educational opportunities available to students by effectively relating college-level courses at thousands of schools to appropriate credit and placement at the colleges that the students eventually attend.

At present, Advanced Placement course descriptions, examinations, and curricular materials are available in art, biology, chemistry, computer science, English, French, German, government and politics, history, Latin, mathematics, music, physics and Spanish.

Through the Advanced Placement Program, high schools establish a reputation for teaching rigorous academic subjects, colleges gain well-prepared students, and students develop higher expectations and increased satisfaction based on hard work in school and college.

High school students who participate in Advanced Placement courses tend to do very well in college. Staff of the Educational Testing Service note a number of important findings in the research on advanced placement:

- When students who have taken Advanced Placement exams are placed into advanced college courses, they perform well academically; approximately 75 percent receive A's and B's in their advanced course work (even at the most selective institutions), and 98 percent pass the advanced course.

- Nearly 90% of Advanced Placement students admitted to colleges take additional course work in the subject area of their examination.

- Advanced Placement students are more likely to get higher grades in all college-level course work in the area of their examinations and tend to graduate with honors at a higher rate than students without advanced placement.

- Advanced Placement students appear to have higher grade point averages in all their subjects as freshmen and sophomores and as graduate students.

- A number of colleges have recognized that even those Advanced Placement students with a low score (a grade of 1 or 2) perform very well in college. (One study found that 89 percent of students with advanced placement grades of 2 received A's or B's; 95 percent received C's or higher.)

- Advanced placement students appear to complete four full years of work at college in greater numbers than students without advanced placement.

In May 1987, a total of 262,081 students took Advanced Placement examinations, 259,105 of whom attended United States secondary schools. This represents an increase of 30,703 candidates, or 13 percent over the number in 1986, and a 217 percent increase over the number of candidates just ten years ago.

The number of schools offering the Advanced Placement Program to their students increased by 575 over the year before, a record one-year growth in secondary school participation since the beginning of the program. The once experimental program involving 104 schools achieved participation by 7,776 schools (76 percent public and 24 percent non-public) in 1987, an increase of 8 percent in participating schools over the previous year.

This rapid increase in participation in the Advanced Placement Program is in part attributable to the national concern for the quality of American education provoked by A Nation at Risk.

Numerous states are including in their steps to ensure quality education the demand to offer programs for bright, gifted and motivated students. For many states, the Advanced Placement Program is an answer to this demand at the secondary level since it is designed to meet the needs of academically advanced, high school students. Several states have legislated Advanced Placement initiatives. In 1984, the Florida Legislature included a special incentive for Advanced Placement participants.

The law allows extra funding to schools for general educational expenditures. Although the amount of the award to individual schools depends on several factors, including school size and district, location, current funding provides an extra one-third budget allocation per full-time student scoring "3" or higher on Advanced Placement. Principals decide how the funds are spent in the schools. Advanced Placement enrollments in Florida have tripled in just four years.

The Alabama legislature appropriated $1.5 million for the 1985-86 school year to support Advanced Placement across the state. The State Department of Education established three priorities to guide funding in the following areas:

- Training teachers and establishing advanced placement courses in all high schools

- Maintaining equipment and advanced placement instructional materials for all high schools in the state

- Awarding funds to schools with students scoring 3 or better on advanced placement exams.

And most recently, the Commonwealth of Virginia required at least one Advanced Placement course to be available in each of its secondary schools.

Despite the documented positive effects of Advanced Placement participation, Wisconsin in 1987 is ranked as 46th among states and the District of Columbia with regard to Advanced Placement candidates as a percentage of high school graduates. (See Illustration 6.) The actual percentage for the state is 2.5%. This figure (from the State Education Statistics, February 1988) actually represents a decrease in comparative rating from 1982, when Wisconsin stood tied with Wyoming. The 2.5% figure in 1987 is only one-third of the national average.

The excuse usually given for Wisconsin's markedly low involvement in the Advancement Placement Program is that a high proportion of rural youth makes the AP program physically and financially unfeasible. It is said that given the large number of small high schools scattered throughout the state, AP is not a viable option for advancing talent—not enough bright students are in one particular location to form an AP class.

This response is totally inadequate. It displays a lack of imagination as well as an inability to pursue and acknowledge what strategies are already being conducted for rural students in other states and to adapt these opportunities to Wisconsin youth.

Sadly, in many small secondary schools throughout the country, the belief persists that learning can occur only in a traditional classroom involving 20 to 25 students. As a result, many able young people are thus deprived of the intellectual stimulation and the rewards which have been gained by thousands of precollegiate students for more than 30 years. Among the demonstrated, in-place strategies to accommodate talented students in rural communities are:

1987 ADVANCED PLACEMENT CANDIDATES
AS PERCENT OF GRADUATES

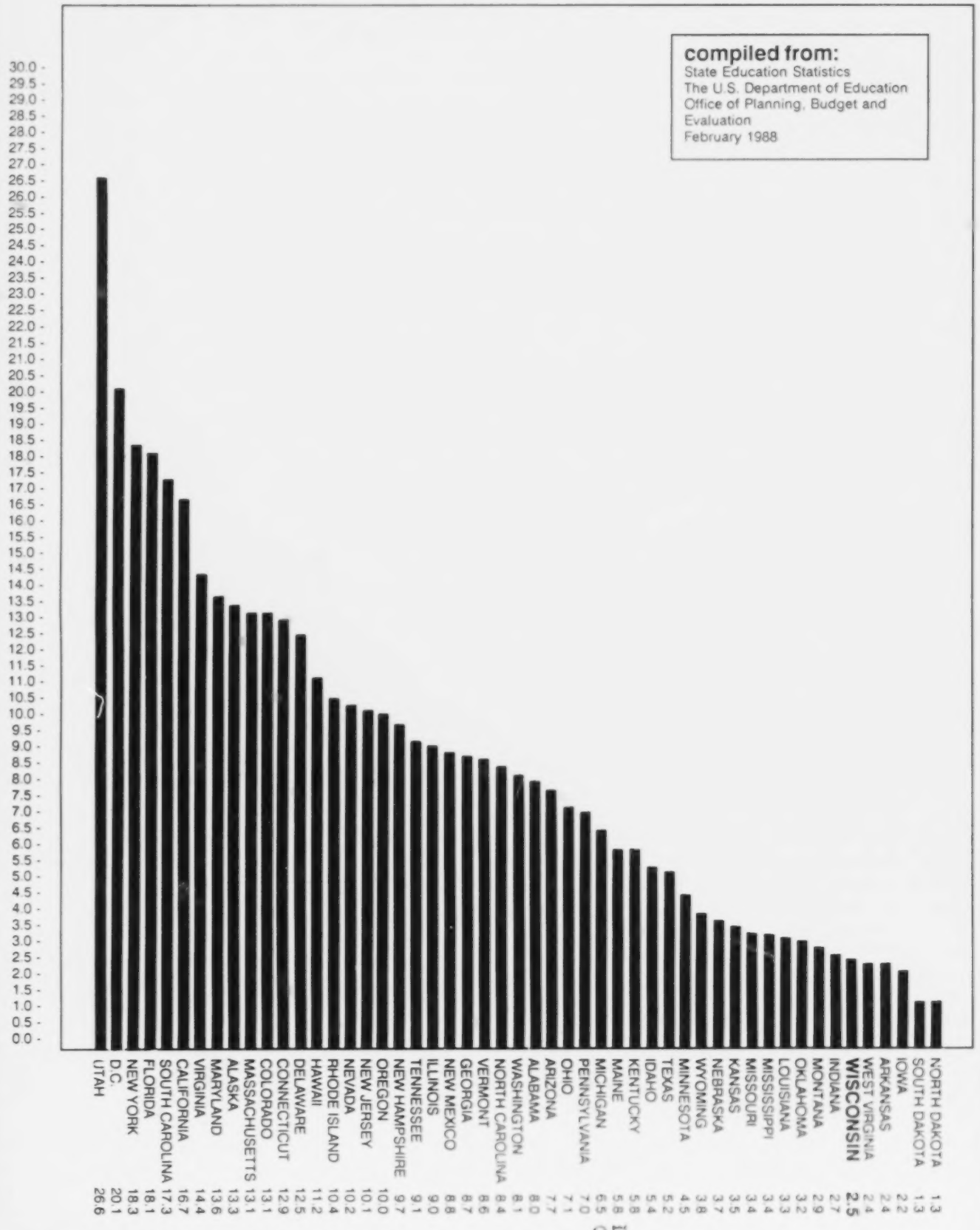

compiled from:
State Education Statistics
The U.S. Department of Education
Office of Planning, Budget and Evaluation
February 1988
30.0 - 29.5 - 29.0 - 28.5 - 28.0 - 27.5 - 27.0 - 26.5 - 26.0 - 25.5 - 25.0 - 24.5 - 24.0 - 23.5 - 23.0 - 22.5 - 22.0 - 21.5 - 21.0 - 20.5 - 20.0 - 19.5 - 19.0 - 18.5 - 18.0 - 17.5 - 17.0 - 16.5 - 16.0 - 15.5 - 15.0 - 14.5 - 14.0 - 13.5 - 13.0 - 12.5 - 12.0 - 11.5 - 11.0 - 10.5 - 10.0 - 9.5 - 9.0 - 8.5 - 8.0 - 7.5 - 7.0 - 6.5 - 6.0 - 5.5 - 5.0 - 4.5 - 4.0 - 3.5 - 3.0 - 2.5 - 2.0 - 1.5 - 1.0 - 0.5 - 0.0 -
UTAH 26.6
D.C. 20.1
NEW YORK 18.3
FLORIDA 18.1
SOUTH CAROLINA 17.3
CALIFORNIA 16.7
VIRGINIA 14.4
MARYLAND 13.6
ALASKA 13.3
MASSACHUSETTS 13.1
COLORADO 13.1
CONNECTICUT 12.9
DELAWARE 12.5
HAWAII 11.2
RHODE ISLAND 10.4
NEVADA 10.2
NEW JERSEY 10.1
OREGON 10.0
NEW HAMPSHIRE 9.7
TENNESSEE 9.1
ILLINOIS 9.0
NEW MEXICO 8.8
GEORGIA 8.7
VERMONT 8.6
NORTH CAROLINA 8.4
WASHINGTON 8.1
ALABAMA 8.0
ARIZONA 7.7
OHIO 7.1
PENNSYLVANIA 7.0
MICHIGAN 6.5
MAINE 5.8
KENTUCKY 5.8
IDAHO 5.4
TEXAS 5.2
MINNESOTA 4.5
WYOMING 3.8
NEBRASKA 3.7
KANSAS 3.5
MISSOURI 3.4
MISSISSIPPI 3.4
LOUISIANA 3.3
OKLAHOMA 3.2
MONTANA 2.9
INDIANA 2.7
WISCONSIN 2.5
WEST VIRGINIA 2.4
ARKANSAS 2.4
IOWA 2.2
SOUTH DAKOTA 1.3
NORTH DAKOTA 1.3

Illustration 6: Advanced Placement Candidates as Percentage of High School Graduates by State

- Tutorials
- 10th-12th grade sequence
- Concurrent study and preparation periods
- Extra-class guidance
- Pooling students
- Pooling faculty talents
- Consortium
- Community tutoring

Several vivid examples of accommodating the needs of bright secondary students in small rural high schools are offered here below.

- Our Neighbor's Kids: Some experiences encountered in setting up an Advanced Placement Program in three small rural high schools, by Stephen O'Connell, Principal, Webutuck Junior-Senior High School, Amenia, New York, a publication of The College Board:

"The Webutuck Central School in rural Amenia, New York, offers Advanced Placement courses in English, American History, Calculus, French, and Spanish to seniors in cooperation with two similar, neighboring Dutchess County school districts (Millbrook Central and Dover Plains Central). The cost of this program would be prohibitive for Webutuck alone, which has 480 students in grades 7-12. Although the others have slightly more students (Millbrook 496; Dover Plains 691) the cost would be equally prohibitive for each of them, but when shared three ways it is very reasonable for each.

"Webutuck and Millbrook began the program in September 1978, in an effort to encourage college-bound seniors to take as challenging a course of study as possible. Highly-motivated students from both schools come together to study and to earn college credit. Until June of 1977, Webutuck had sent interested seniors to a local two-year college to take a few college courses in addition to their high school program. When the college closed in 1977, Webutuck began to study other ways of offering a more enriched program for college-bound seniors. A Webutuck graduate, then attending an Ivy League school, indicated that most of the students he knew at college had taken AP courses in high school. Other graduates had related similar experiences. This helped to support a major reason for adopting an Advanced Placement program: AP credit is widely recognized and accepted by colleges. After searching for an advanced program for its seniors, Millbrook readily accepted the idea of joining with Webutuck. In planning the program, the superintendents of Webutuck and Millbrook had to solve the problems of selecting a location, appointing the staff, providing transportation, making up the schedules, and meeting the costs. Millbrook, which had available classroom space in an administration building, became the ideal location. Webutuck was already busing its occupational-education students through Millbrook to the BOCES technical center. BOCES (Board of Cooperative Educational Services) is an intermediary education agency in New York State which offers occupational education programs for all component school districts and administers shared services between local school districts. At no extra cost, the Webutuck

Advanced Placement students were able to ride the afternoon BOCES bus to their courses. The Dover School District began busing their students to Millbrook in the same way when they joined the program in September 1980. Students receive an average of three hours and 45 minutes of instruction in three meetings per week per course. Dover Plains has 4 participants, Millbrook Central 19, and Webutuck 17. The number of students in each AP course is: Calculus 16; French 2; English 33; Spanish 3; and American History 4. In preparing the master schedule at the home schools, we found that important high school courses for AP seniors must be offered in the morning.

"The teachers are hired on a part-time basis; they are paid a flat fee for each section of a course they teach. Each teacher has at least a master's degree in the area taught and previous secondary school and/or college teaching experience. In the staffing process it was learned that many very qualified people wish to teach on a part-time basis. Some of the teachers are housewives who stopped teaching to raise their children. They like the idea of teaching one or two classes now that their children are in school. In other instances the teachers are writers or part-time college teachers who are willing to teach on a very limited schedule.

"The per-pupil per-course cost of the program is $365 for the 1981-82 school year. The cost to Webutuck is $12,047 for 17 of its students taking a total of 33 courses. The total cost of the program is $27,748, and it qualifies for state aid as a shared program under the auspices of BOCES.

"Support for the program was made easier because we were offering an inexpensive, high-quality educational option to students in a rural area. With declining enrollment (from 650 students in grades 7-12 in 1977-78, to 480 students in grades 7-12 in 1981-82) and increasing pressures to limit expenditures, it is an economic and efficient way to enable college-bound students to obtain college credit. The students thereby save time and money in obtaining a college degree.

"With 50 percent of Webutuck's graduating class entering two or four-year colleges each year, a number of students continue to opt for AP courses. Student evaluations of the program indicate that, for the most part, they believe they received a more intense course than they would have at the regular high-school level, and the exchange with students from other schools added a dimension of academic challenge they had not experienced before. Our students enjoy the open atmosphere of the AP center and the chance to relate to students from other participating school districts. The students from Millbrook responded in a similar way. Many of them indicated that it was the first time they were challenged academically. The majority of the AP students are awarded college credit by the institutions they attend.

"Although the program may have already reached its limits in terms of the number of AP courses that can be offered, the participating districts are studying the possibility of including AP Science courses. A prestigious research institution located not far from the AP center has offered its laboratory facilities and teaching services to the local AP program. This kind of expansion could more easily occur should other school districts decide to participate. At a time when resources for education seem to be dwindling,

Webutuck has found that developing an AP program in cooperation with other districts has helped to provide quality alternatives at a cost acceptable to the community."

- Our Neighbor's Kids: Some experiences encountered in setting up an Advanced Placement Program in a small high school, by Wilmina Phelps, AP English Teacher, McCall-Donnelly High School, McCall, Idaho:

"I teach in a small high school in the rugged and isolated central mountains of Idaho. McCall is a small community with a population of about 1,500, which expands manyfold during the tourist and ski seasons. We are rich in natural beauty but far from any large cultural center—the nearest university is 100 miles away. Our four-year high school has a student body of about 170 students (about 55 in the senior class) with 15 teachers. Because our offerings are limited, we have to make every class count in as many ways as possible, and we try to provide our students with at least some of the things a larger community would offer. That's part of the nature of a tiny school.

"Three years ago we decided that our curriculum lacked challenge for those top students who find their senior year not stimulating enough and therefore often elect to graduate early. We wanted to give them a reason for staying in school, and we wanted to equip them with skills they would need in college. We found that Advanced Placement fitted the bill precisely. We also liked the possibility of our students earning college credit while still in high school. We chose AP English because it emphasized those skills we needed to include, because it was the easiest course to set up without a lot of expense, and because there was a teacher willing to try it—me. We also felt that our senior English program lacked sufficient depth.

"We were especially attracted to AP because it was skill oriented. Rather than requiring specific material to be read and learned, we felt that AP examinations tested the ability to use certain skills needed to successfully meet the challenge of the college classes our top students would face the following year—skills such as in-depth reading, extensive writing, use of evidence and support for statements, and the ability to answer essay questions.

"I was sent to a work session with people connected with the College Board to help write a booklet on teaching AP English tutorially. I went because I knew about small schools, and I soon learned about Advanced Placement and its potential for our students. With the strong backing of our administration, I started our first AP class that fall with five students. We chose to have a class, even a small one, rather than handle the course tutorially, because this way the students and I could devote more time to the work and really give it a chance. In a small school, most top students are tops in everything and do everything, and it was for that reason we felt a class situation would better meet their needs and hold their attention.

"I used the College Board publications and suggestions to get started. I chose books for the course that I liked and was familiar with and that were also on the recommended lists. I did not cover many, but I covered them thoroughly. I have since attended a few AP workshops and they have helped me immensely in developing the class. I started with a plan based on genre, then switched the next year to a humanities approach, and this year I am trying a combination of both.

"In preparing for AP, I try to teach the skills needed to take the exam as the purpose for the class and let the exam become secondary. I strive to make the material broad enough so the students will have good literature to choose from on those questions where a choice is required. I also strive to make all written work challenging and use several of the past examination questions as assignments so that my students become acquainted with the exam and develop the skills necessary to handle it.

"For materials, I use paperbacks that no one else wants. We also borrow from the community, raid attics, use parts of old textbooks, and purchase a few sets each year—this is all part of the challenge! I have also encouraged students to buy their own copies so they could write in them.

"My class has grown from five in the first year, nine in the second, and 14 this year. (Word has gotten around.) And I have found that our hardest job is screening students for the class. I teach all the sophomores, so by the end of the year I can recommend, with input from other teachers, that all potential AP candidates take College Writing in their junior year (our prerequisite for AP English). We look for students who are academically strong, have a strong interest in learning, and like to read. We also strive to make them see it as a compliment that they are being asked to join the program. At the end of their junior year, I see them again, and with the help of the College Writing teacher and our school counselor, we reevaluate them. I also feel that if a student really wants to join the class, even though he or she has not been recommended, the application should be considered. However, I also have to consider the rest of the class and not water down the ability level. Sometimes I take several individual conferences to finalize the list of students for the class, but that is one of the real advantages of a small school—we all know each other pretty well.

"Because the students usually have little opportunity for an in-depth background in the classics, when I give information to the sophomores about the class I also give them a reading list to work on during their junior year, and at the end of that year when we meet again I reissue the list. I also encourage some study or at least some reading of world history to help them better understand the period of the work they are studying.

"We have had no problems working the AP class into our curriculum because the school puts academic work first in scheduling: consequently, no academic classes conflict on the senior-class schedule. We are also dealing with a small number of students so it is easier to make sure that they are able to study their preferred subject. We did find it a little hard to set up prerequisites, but we decided to use our College Writing course as the prerequisite to be taken in the junior year. This saved the integrity of the junior/senior advanced class and gave the students the needed skills to handle AP course work. It also took the pressure off having to teach research and basic college writing skills in the AP class, thus freeing them for a more concentrated study of writing on literary subjects.

"I feel that firm administrative and counselor backing is essential. At first, I found a good deal of hesitation and not a little suspicion on the part of the staff, but now, in our third year, the support is firm. The Science, Math, and History departments have asked for College Board materials in these fields. They are seriously considering

incorporating AP goals into the advanced classes in those subjects, as well as the possibility of offering more AP exams in the future.

"Looking back over three years of teaching AP English, I feel the advantages far outweigh the disadvantages. We are challenging most of the top students we wanted to reach and there seems to be more respect for "thinking" and taking difficult classes in the senior year. I sense a feeling of pride in some of my students when they prove to themselves that they can handle a college-level class while still in high school, and a sense of "I'd better get in and dig if I'm going to make it" from those who find the work more difficult. I am also getting good reports from our graduates in several colleges who are using the skills they have developed. They especially point out the skills of being able to read in depth, to use evidence and support in substantiating their ideas, to organize essay questions and get the most done in the time allowed, to recognize universality as well as how a work is bounded by its time, and to recognize major authors and works. Our success rate has also been satisfactory, with several students earning college credit and some being admitted to an honors program, due, at least in part, to the AP class.

"I feel that the most distinct advantage a small school has when setting up an AP program is that the size of the class is small, and that there is only one. I teach most of the class as a seminar with lots of open discussion. This seems to encourage a sense of comradeship as we tackle an author together and try to conquer the problems of learning the skills needed to meet the goals of the class and the exam. We get to be a close-knit group—everyone gets to know each other well and to develop a new respect for each other's abilities. There is lots of competition, but most of it is friendly. The students read each other's graded papers and help one another. It's a hard relationship to explain, but we all value it highly. It is also an informal relationship because there are so few of us, and every so often we have a party to ease the tension or reward ourselves on a job well done. It can be fun!

"I have not found any real disadvantages, yet, except perhaps our grading system. Some students feel they owe it to their "position" to participate in Advanced Placement, and if they do not make it, it can be a blow. Some members of the class become snobbish and feel that as long as they "kind of" do the work, they deserve an A. But this disadvantage can be counteracted with revision of the grading system and individual counseling.

"On the whole, AP is very demanding and time consuming. I must read the works carefully, no matter how many times I've read them before, and papers must be carefully graded and all comments defendable. I require lots of writing from my students, and because I teach other classes there is often not enough time to grade their papers adequately. I find grading to be the biggest challenge as I want to be fair, tough, and realistic, bearing in mind that these students are taking a college-level course and should not be penalized.

"Yet the rewards far outweigh the problems. I am working with top students and my efforts really bear fruit. I can see them catch hold, use my suggestions, and improve. I get a chance to teach my favorite works on a different level with these students and I gain more insight every time I rediscover a work. I am also challenged to look for new

material and new approaches. Each new crop of AP English students presents me with new challenges on a more intense level than any other subject I have taught. If anything, I am more enthusiastic about the course now than when I started. It has become my renewal—this is my twenty-fifth year of teaching English and I feel I am teaching all my classes with more depth and verve than before!"

GIFTED AND TALENTED EDUCATION
Wisconsin State Government's Commitment to Gifted and Talented Education

Compared to many states, Wisconsin's commitment to educate its most gifted and talented children in a comprehensive, systematic fashion remains highly questionable. Wisconsin self reports that the greatest strengths of its gifted programs are diversity and local control (in the 1987 State of the States Gifted and Talented Education Report, issued by The Council of State Directors of Programs for the Gifted). Yet overriding leadership usually comes from state government, and in Wisconsin's case its performance is questionable. Only this year was gifted and talented education in local schools a mandated activity by the Wisconsin Legislature, and even this gesture so far has been rendered insignificant because no state funding accompanied the legislation, excepting the establishment of a full-time state coordinator. New legislation requires that schools throughout the state must have at least a beginning gifted and talented program available within their local districts. Again, money is not available to implement fully this directive. The ability of the state agency to respond efficiently and quickly to inadequacies in the preparation of Wisconsin's bright precollegiate youth is at this moment to be doubted.

WISCONSIN IN CONTRAST TO SELECTED OTHER STATES

A comparison of Wisconsin with several neighboring states is instructive not only with regard to its gifted and talented initiatives from the state level but also those related state-supported activities that contribute to high quality education among bright precollegiate youth.

ILLINOIS

Currently, the greatest self-reported strengths in Illinois' gifted programs are: the linkage network of local, regional, and state delivery of services; the Illinois Statewide Talent Search for highly talented sixth graders and corresponding academic-year and summer programs; and the commitment of local districts.

Talent Search in Illinois:

Illinois' disposition towards the Talent Search model is instructive. The Talent Search was pioneered in 1971 at The Johns Hopkins University, Baltimore, Maryland. It is intended to identify exceptional academic potential (the top 1st to 3rd percentile nationwide) and facilitate their education through fast-paced course work and related activities. This often involves intense study of mathematics, the sciences and the humanities by junior high and high school students, in cooperation with colleges and universities. Research unequivocally demonstrates the positive effect such a project

can have in advancing highly talented youth in comparison to students who are not presented with the opportunity. For example, a recently published follow-up study (C. P. Benbow and J. C. Stanley, Eds., 1983, Academic Precocity: Its development, consequences and nurturance, Baltimore, MD: The Johns Hopkins University Press) traced the progress through high school of intellectually talented students identified in the first three Johns Hopkins Talent Searches beginning in 1972. The students who were followed up had, as seventh- or eighth-graders, scored better on the College Board's Scholastic Aptitude Test—Mathematics and/or Verbal sections—than had a national sample of eleventh- and twelfth-grade females. Of the 2,188 students selected for this study, over 90 percent (1,996) returned the survey. Among the results are the following observations:

- The Talent Search students maintained their initial superior ability throughout high school compared to a national sample of college-bound seniors, the students' mean scores on the SAT-M and SAT-V in high school were approximately 200 and 170 points superior, respectively.

- Overall the Achievement Tests taken during the high school years by at least 90 percent of the group showed that their mean scores were approximately 100 points above the mean for 1978-79 college-bound seniors.

- The degree of participation in high school mathematics by the mathematically talented students was outstanding. As a group, the target students took one year more of mathematics than college-bound seniors and received mainly A's and B's for their course work. With respect to calculus, almost 66 percent of the boys took at least one calculus course, compared to 40 percent of the girls. This is ten times the rate (for each sex separately) at which high school students in general take calculus.

Illinois has become involved extensively in the Talent Search model. Not only is the state served by the regional Midwest Talent Search at Northwestern University, Evanston, Illinois, but also the state itself has initiated a Talent Search for sixth graders. In 1988, this statewide search celebrated its largest student participation of some 6,500 students. In response to the Search itself, Illinois Regional Service Areas (groups of local public school districts) have encouraged schools and a variety of public and private colleges, universities and community colleges to cooperate with junior high schools and high schools to offer especially designed academic course work for Talent Search students so that their highly gifted youth throughout the state may be challenged and advanced well before formal, full time college study.

Among these specially-designed programs are:
- College of DuPage, Glen Ellyn, Illinois
Title: "Talent Search"

Courses	**Requirements**
Writing I	SAT-V 400
Math Topics	SAT-M 420

- Northwestern University, Evanston, Illinois
Title: "Summer Program for Academically Talented Adolescents"

Courses	Requirements
Precalculus Math	SAT-M 500 and SAT-M + SAT-V = 900
Statistics and Probability	SAT-M 500 and SAT-M + SAT-V = 850
Computer Science/ Intr. to Pascal	SAT-M 500 and SAT-M + SAT-V = 900
Chemistry	SAT-M 500 and SAT-M + SAT-V = 900
Biology	SAT-M +SAT-V = 830
Latin I/II	SAT-V 430 and TSWE 35
Archaeology	SAT-V 450 and SAT-M + SAT-V = 850
Literary Analysis	SAT-V 430 and TSWE 35
Studies in Writing Non-Fiction	SAT-V and TSWE 35
American Culture	SAT-V 430 and TSWE 35
Art and Art History	SAT-V 430 and TSWE 40

- Northwestern University
Title: "The 1987 Equinox Program for Older Adolescents"

Courses	Requirements
Humanities and Writing Science	10th grade students who previously participated in Talent Search and fast-paced university summer programs

- Oakton Community College, Des Plaines, Illinois
Title: Academic Talent Search/Oakton Summer Program

Courses	Requirements
Fast-paced Verbal-	SAT-V 400 and TSWE 30
Levels I, II, III	
Fast-paced Math -	SAT-M 420
Special Topics	

Wisconsin does not conduct its own statewide Talent Search. While it has available to its seventh- and eighth-graders Northwestern University's Midwest Talent Search, its involvement has been dramatically low. For example, Wisconsin comprised, in 1985, 5.9% of applications, in 1986, 5.8%, and 1987, 4.4%. In contrast, Indiana comprised 28.8% in 1985 and 1986 and 24.8% in 1987; Michigan 36.8% in 1985, 35% in 1986; and Ohio 24.6% in 1985, 26.5% in 1986, and 28.2% in 1987.

Wisconsin, again in contrast to other states, as with the Advanced Placement Program, does not take maximum advantage of opportunities which would advance its brightest and most motivated precollegiate students. Not only is its identification of these talented youth (with extraordinary verbal and mathematical reasoning abilities as determined by a Talent Search) low, but correspondingly its schools, colleges and universities have failed to respond with an extensive network of support services comparable to that available in, for example, Illinois. Only Green Bay Area Public Schools/the University of Wisconsin-Green Bay ("Talent Search Program"), the University of Wisconsin-Stevens Point ("Youth in College"), and the University of Wisconsin-Eau Claire ("Institute for High Potential Students") offer courses that demand a high level of ability among junior high school students as determined through the Midwest Talent Search identification process—high in-grade achievement test scores and out-of-level Scholastic Aptitude Test (SAT) for seventh- and eighth-graders approximate to that of college-bound seniors. And, a program at the University of Wisconsin-Madison that resembles the Talent Search in identification procedure and course offerings suffers badly from poor enrollment due to as yet undetermined reasons. Entitled the "Badger Talent Search," a program under the guidance of the Educational Psychology Department, students in the 6th, 7th, 8th and 9th (11-13 years of age) are recommended by Gifted/Talented Coordinators, teachers and/or parents to take the SATs. Those who qualify through their SAT scores are invited to participate in a five- or six-week summer commuter program in either a mathematics or English course. In 1988, 170 students took the SAT and 80 qualified for the academic programs. However, due to the poor response, program sponsors are considering terminating the project next year.

Residential High School for Talented Youth in Illinois

According to the "Gifted Education in Illinois Report and Preliminary Recommendations" (1987) from the Illinois Office of Education, the state is committed to addressing the following: - that appropriate educational programs are available to the gifted and talented students who need and can profit from them;

- that students have equal access to programs and services for gifted and talented students; and,

- that the educational programs provided for gifted and talented students meet general standards of adequacy and appropriateness.

During the 1986-87 school year, Illinois had the highest state funding level in the history of the gifted program. Additionally, in April of 1987, the State Board of Education adopted a new policy statement towards the nurturing of gifted and talented students in the state.

Illinois dramatically underscored its commitment to advancing the best and brightest of its precollegiate youth when on September 7, 1986, the Illinois Mathematics Science Academy (IMSA) opened its doors to 210 of the state's most talented 10th-, 11th-, and 12th-grade students. It marked Illinois' response to the need for citizens and leaders better educated in science, mathematics and technology. Located in Aurora, IMSA is

only the nation's third public residential high school for students gifted in mathematics and science.

A task force appointed by Governor James R. Thompson concluded that:
There is a widely recognized perception that the nation is facing a crisis in fulfilling its needs for citizens trained in the fields of science, mathematics, and technology . . . the state of Illinois has an obligation toward this national issue and to its own need.

While Illinois has provided gifted and talented programs for students in schools and school districts across the state, it was judged that these programs may not have been sufficient to serve the needs of highly gifted students. According to the report "Gifted Education in Illinois: Report and Preliminary Recommendations" (1987), from the Illinois Office of Education, highly gifted students have special needs. The report states that:

One group of gifted students for whom it is especially challenging to provide appropriate educational programs is the exceptionally gifted—the top half of 1%—who are so significantly different from their peers that they require dramatically different educational programs.

It further states:
There is, in fact, a dearth of information at the state level about what local districts do for highly gifted students at any time during their school years. However, based on informal information received from local school districts, it is believed that these students present such a unique challenge that even some of the most sophisticated schools in the state are unable to provide the advanced and specialized opportunities these students need.

Thus, Illinois, in stark contrast to Wisconsin, perceives that to ensure an appropriately challenging education for some of its most talented precollegiate youth, the comprehensive and extensive purview afforded the state is required, in contrast to the more limited perspective of the local district.

The Illinois Mathematics and Science Academy was created to meet the needs of this special population throughout the state of Illinois. Educating Illinois' brightest minds was correspondingly established as an investment in the future of Illinois.

In July, 1986, the Illinois Legislature appropriated (FY86-87) $3.5 million for the Academy's first year of operations and start-up costs. Through the State Capital Development Board, the Legislature also appropriated $5.6 million for the construction of two dormitories and renovations to the existing facility.

FY87 Capital Development Board appropriations included an additional $11.5 million for construction of three dormitories to house the in-coming class arriving in the fall of 1987. FY88 Capital appropriations included $22.1 million for the construction of the remaining four dormitories and the purchase and renovations of the academic building. For FY87 the IMSA Board of Trustees voted to assess student fees of approximately $500 to $600 per student, with special considerations given to families with financial need. IMSA has no taxing power and no ability to generate revenue

through tax levies as in the case with public school districts; nor can it borrow money through tax anticipation warrants. IMSA also has limited access to State Board of Education Categorical Funds. The Academy relies primarily on Legislature appropriations for its operating and capital development budget.

IMSA has maximized the vital role that The College Board Advanced Placement Program can play in forwarding the education of its bright young students. The Academy assumes AP level or higher quality work as a minimum performance expectation. IMSA has also taken the bold move of permitting its students to engage in AP examination not as applied in most schools throughout the country—exclusively in the senior year—but rather when they are ready. For example, many IMSA students take the test as sophomores, earning AP scores that may apply towards college credit and also permitting students to advance according to their true pace and level of learning and not according to an arbitrary imposed schedule. Postponing rigorously demanding learning until the senior year for many bright students often results in waning interest and boredom in the subject.

And finally, IMSA has exploited fully a network of educational opportunity and reinforcement which occurs when precollegiate schooling is viewed as an integral part of a state's and nation's network of schools, colleges, universities, business and industries jointly committed to advancing learning and not as an isolated, self-sufficient building activity.

This reliance with the creation and maintenance of a multi-faceted networking for learning is witnessed at IMSA in numerous ways:

Saturday Seminars

Students participate in monthly Saturday Seminars that attract nationally renowned specialists. The required seminars are a complementary part of the academic program. Speakers include Dr. Larry Smarr, Director of the University of Illinois' Cray Supercomputer Center and Dr. Leon Lederman, Director of Fermilab.

Information Resource Center (IRC)

With the support of the school's operating budget and a three-year $300,000 grant from the Furnas Foundation (Batavia), the IRC provides the entire IMSA community with access to both traditional and non-traditional information resources. In addition to IMSA's print collection, the IRC offers faculty, staff and students access to the materials of three other libraries in the area: Aurora University, Waubonsee Community College and the Aurora Public Library.

The Academy, through IRC, has extended its resources by serving as the centers of a growing network of information available through on-line data bases, facsimile transmission and the PLATO educational network. In 1988-89 the IRC will offer an on-line catalogue of holdings,direct access to extensive data bases available on laser disk and CD-ROM, and gateways to local, regional, national and international computer networks.

The Extended Campus

IMSA students have educational opportunities available beyond the Academy facility. The opportunities are provided by organizations within the IMSA network or through national organizations and agencies seeking bright students to participate in special projects and unique experiences.

Mentorships

The goal of the Mentorship program is to provide students with regular access to researchers and scientists in the natural setting of the laboratory. All students tour research laboratories at Northern Illinois University and Fermi National Acceleration Laboratory. Several students visit Nalco Chemical Laboratory.

Operation S.H.A.R.E.

Six students are involved in basic research in conjunction with Operation S.H.A.R.E. (Southern Hemisphere Aerostat Research Expedition). Operation S.H.A.R.E. is a balloon launch designed to be the first circumnavigation of the globe by a lighter-than-air balloon. IMSA students develop special plates coated with film emulsions to send on the balloon for a study on the interaction of cosmic rays.

Department of Energy Summer Program

Four IMSA students were selected to represent the state of Illinois in summer programs sponsored by the United States Department of Energy. The students participated in two-week programs held at Lawrence Livermore Laboratories, University of California, Brookhaven National Laboratory and Fermi National Acceleration Laboratory.

National Institutes of Health

The NIH invited students and teachers from throughout the country to attend a special three-day Centennial Celebration in Washington, D. C. Another IMSA student was invited to participate in a three-day career workshop for minorities held in Nashville, Tennessee.

Statewide Outreach

IMSA has a secondary mission to serve as an educational laboratory and resource for the state of Illinois. The mission is channeled through the statewide outreach program which has as its primary goal: . . . to improve the education of mathematics and science throughout the state of Illinois by developing innovative, effective programs for a diversity of school environments. IMSA has initiated special summer programs and goals including hosting residential mathematics and science workshops for elementary, junior high and high school students and teachers across the state.

The U. S. Department of Energy sponsored a two-week program that featured workshops at Fermi National Acceleration Laboratory, IMSA and Naperville High School. The Academy served as headquarters for 58 students (one for each state and eight foreign countries).

The Outreach Program of IMSA works closely with many other organizations in disseminating innovative techniques and information to schools and educators around the state. Two organizations that closely support the goals of the Academy and its Outreach program are the Corridor Partnership of Excellence in Education (CPEE) and the Friends of Fermilab.

CPEE is a unique consortium of leaders representing elementary and secondary schools, colleges and universities, research and development laboratories, business and industry, and government and labor in northern Illinois. CPEE's recent goals include the initiation and implementation of an Illinois partnership for excellence in education. The partnership would establish a statewide alliance to promote and develop mathematics and science programs that have proven to be effective in the high-tech corridor of northern Illinois.The Friends of Fermilab founded in 1983, among other activities, bring together national, state and regional educators, researchers, corporate leaders and specialists in teaching the gifted.

MINNESOTA

Minnesota educators have developed a wide variety of options for gifted and talented students. These include magnet and special focus schools, talent pool classes, mentorships, cluster grouping, advanced classes, international baccalaureate, and participation in many academic competitions.

Since 1979, when the State Legislature established categorical aid for gifted and talented education, the number of gifted and talented students has increased yearly.

The Postsecondary Enrollment Options Act (PSEO) in Minnesota:

As in Illinois, with the Mathematics and Science Academy, the advancement of bright precollegiate youth in Minnesota is being underscored by bold and innovative measures by the state legislature to match the needs of rapidly developing talent. For example, The Postsecondary Enrollment Options Act (PSEO), enacted in June 1985, as amended by 1986 laws, is an unprecedented initiative of the Minnesota Legislature to enable any 11th- or 12th-grade public school student to enroll in non-sectarian courses or programs for secondary school credit in eligible postsecondary institutions at no cost to the student. The specific purposes of this Act are to promote rigorous educational pursuits; and provide a wider variety of options for students.

Eligible institutions are Minnesota public postsecondary institutions or private, residential, two-year or four-year, liberal arts, degree granting colleges or universities located in Minnesota.

The role of Minnesota Department of Education (MDE) then with respect to the Act was two-fold: to provide leadership in the implementation of program throughout the local

Illustration 6: Advanced Placement Candidates as Percentage of High School Graduates by State

districts and to evaluate the impact of the program on participating individuals and institutions. Evaluations of the first two years of the Act follow:

- During the 1985-86 school year, 3,668 students from 330 high schools in 272 districts participated in the PSEO program. They attended 74 postsecondary institutions throughout Minnesota. More females than males participated, and more 12th-graders than 11th-graders participated. Participants tended to be children of well-educated parents. Students indicated that while the major source of information about the program was the high school counselor, parents were the major source of encouragement.

The major reasons given for participation in the program were to get a head start on college and an interest in the educational opportunities provided by the program. A variety of reasons were given for why students chose a particular postsecondary institution; however, the most frequent reason was proximity—the postsecondary institution was close and transportation was easy. The highest rate of participation came from high schools in regions outside the metropolitan area. More students enrolled in courses at community colleges (49%) than at any other type of postsecondary institution.

The most typical PSEO participant enrolled in one single course at the postsecondary institution, and less than one percent of the participants enrolled in more than 15 credits throughout the school year. Thirty-seven percent of the courses taken were in humanities, which include social science, social studies, history and foreign languages. Communication, which includes English and literature courses, comprised the second most frequently taken group of courses. Overall, student participants performed well in postsecondary courses. A grade of A or B was received in over 50 percent of the courses. Students attending private institutions had the highest grade point average (3.18), while students attending the community colleges had the lowest grade point average (2.78). Students reported that in general, courses at postsecondary institutions were more difficult than similar courses at the high school level.

After one year of operations students, parents, high schools, and postsecondary institutions were generally pleased with the implementation of the program and its impact on participants. Ninety-five percent of the students were either very satisfied or satisfied with the program and only one percent of the students were dissatisfied. Ninety percent said that they learned more by participating in this program than if they had taken only high school courses.

Both high schools and postsecondary institutions were generally supportive of the program. The University of Minnesota, state universities, community colleges and private institutions felt that the program is geared towards students with high grade point averages. The area vocational technical institutes felt that the program is geared towards students with a particular vocational interest.

The problem most frequently identified by all the participants was coordinating class schedules between the secondary and postsecondary schools. Transportation was not considered to be a major problem by either students or parents. Both the high

schools and postsecondary institutions felt that their respective counseling services could be improved.

- Fiscal Impact/Highlights:

The Postsecondary Enrollment Options Program requires that state-allocated foundation revenues of local school districts be used to support students choosing to attend a postsecondary institution. In effect, state-allocated funds follow students if they choose to attend a postsecondary institution. The fiscal analysis was organized around two questions: I) What is the absolute fiscal impact of the PSEO program on postsecondary institutions and local school districts? and 2) Does this impact on local school districts vary systematically with the characteristics of these school districts? In summary, it was found that the average revenue reduction as a percentage of total operating revenue was only slightly more than 1/10 of one percent and the average revenue reduction as a percentage of grade 11 and grade 12 foundation revenue was only about 8/10 of one percent. The Postsecondary Enrollment Options Program is small in size and the resulting fiscal impacts are consistent with the program's size.

- 1986-87 Program Information:

In the fall of 1986, 2,182 students from 243 districts enrolled in 63 postsecondary institutions under the PSEO program. The number of female participants exceeds the number of male participants by a ratio of 59 percent to 41 percent. Only 27 percent of the 12th graders and six percent of the 11th graders are full-time students (enrolled in 12 or more credits). When these figures are compared to enrollment figures for the fall term of 1985, the only significant difference was in the number of full-time 11th grade students. In spite of the fact that more students knew of the program, the increase in number of participants from fall 1985 to fall 1986 was insignificant (1,735 to 2,182 respectively). The predicted mass exit of students from high schools did not occur. The Postsecondary Enrollment Options program appears to be meeting its purpose. The majority of students is part-time which indicates that they are taking advantage of particular courses of interest and still maintaining contact with the high school.

Minnesota and The College Board Advanced Placement Program (AP):

The Minnesota Department of Education has also, in contrast to Wisconsin, taken concrete steps to come to terms with involvement in The College Board Advanced Placement (AP) program. Minnesota's participation in AP is higher than Wisconsin. Minnesota is ranked 36th, while Wisconsin is 46th, among the 51 rankings for all states and the District of Columbia in Advanced Placement candidates as percent of graduates. Reasons most frequently given by high schools that do not offer AP are that too few students would enroll, parents and students have not requested AP, and high schools themselves have not looked into AP. Minnesota statute 135A.10 required all public colleges to develop policies regarding AP courses by January 1987. A review of AP policies in Minnesota postsecondary institutions revealed that prior to January 1987, policies varied considerably. Various states' models—to include Florida, South Carolina, Louisiana and Utah, were reviewed for alternative funding methods which could be used to establish statewide AP programs in Minnesota. Based on Minnesota's current AP and funding policies, as well as on the

models reviewed, three possible alternatives are provided for implementing AP programs in Minnesota:

- Initiate an information system which would provide school districts with information on how to implement an AP program—no state funding would be provided;

- Provide state funding on a per pupil basis to assist districts to initiate AP programs; and,

- Mandate that all districts implement an AP program or a similar program. State funding for training of teachers, course materials and student examinations would be provided.

Minnesota and School-College Partnerships:

Finally, as part of Minnesota's bold initiative to advance and solidify its responsiveness to its brightest precollegiate students, the Postsecondary Enrollment Options Program contains in its Final Report (January 1987) discussion of yet another way to provide choice to students, parents and schools in this effort—the offering of postsecondary courses in the high schools. There are cooperative plans such as that of the North Branch Anoka/Ramsey Community College program, which represent agreements between high schools and postsecondary institutions and do not place additional financial burdens on either body and two-way televised instructional programs. The successful implementation of such programs, it is concluded, is evidence that such alternatives are feasible and do provide postsecondary courses to students in areas where geographic location makes access to postsecondary institutions difficult.

MICHIGAN

Michigan has adopted the Federal definition of Gifted and Talented as stated in 1978 by the U. S. Office of Education, Public Law 95-561, Title IX, Part A, Section 602.

While gifted education in Michigan is a permissive function by districts, rather than a program mandated by state legislation, a strong and extensive presence of qualified gifted/talented consultants is found in virtually all intermediate school districts throughout the State providing leadership, training, and resources to local districts.

Michigan and the Talent Search:

Michigan supplements its local activity for identifying and educating gifted and talented students by substantial participation in a school-college collaboration—the Midwest Talent Search of Northwestern University. For the past three years, for example, Michigan has participated more extensively than any other of the principal states involved (Illinois, Indiana, Minnesota, North Dakota, South Dakota and Wisconsin). Michigan junior high school students in the top fifth percentile comprised 36.8% of the total 20,579 Talent Search applicants in 1985, 35.0% in 1986, and 36.1% in 1987. Overlapping local identification of gifted and talented youth with a regional program focusing on highly gifted junior high school students provides Michigan yet another

method of ensuring that it locates as many of its brightest precollegiate students as possible.

Michigan meets the challenge of advancing these highly talented students through a number of imaginative ways, including a series of school/college partnerships that respond directly to the academic needs of 7th- and 8th-grade participants in Northwestern University's Midwest Talent Search. Again, the response of universities in Michigan as compared to Wisconsin when directed to its most talented precollegiate youth—those already scoring on such measures as The College Board Scholastic Aptitude Test given at a young age—is dramatically high. Among the school/college partnerships and programs in Michigan are:

- Delta College, University Center Michigan

Title: "Academically Talented Youth Program"

Courses	Requirement
English III College Comp I	SAT-V 400
English 112 College Comp II	SAT-V 400
Computer Science 140/142 Basic Programming	SAT-M 400
Computer Science 171 Pascal	SAT-M 450
Computer Science 165 Fortran	SAT-M 450
Math 107 Algebra	SAT-M 400
Speech 112 Fundamentals of Oral Communication	SAT-V 400
Sociology 211 Principles of Sociology	SAT-V 400

- **Detroit Public Schools, Detroit Michigan**

Title: "Summer Institute for the Gifted"

Courses	**Requirements**
Astronomy/Physical Science	SAT composite 650
Computer Mathematics	SAT composite 650
Greek Mythology/ Art History	SAT composite 650
Journalism/Creative Writing	SAT composite 650

- **Kellogg Community College, Battle Creek, Michigan**

Title: "Summer Session for Academically Talented 6th, 7th, and 8th grades"

Courses	**Requirements**
Astronomy	Midwest Talent Search Participant - Top 10%
Writing with a Purpose	
Oriental Culture	

- **Michigan State University**

Clinton/Eaton and Ingham School Districts, East Lansing, Michigan

Courses	**Requirements**
Accelerated and Enriched	SAT-M 500; SAFM &
Pre-college	SAT-V 920
Mathematics	(Students must attend school in Clinton, Eaton or Ingham County.)

- **Michigan State University, Ingham Intermediate School** District, Mason, Michigan

Title: "Dimensions"

Courses	Requirements
Problem Solving Mathematics	SAT-M or SAT-V 45
Introduction to the Study of the Brain	
Folklore from World Literature	
Theater Lab	
Music Lab	
Computer Graphics Lab	
Painting Lab	

- **Wayne State University**

Title: "Wayne State Honors Summer Program for MTS Students"

Courses	Requirements
Psychology: Analytical	SAT-V & SAT-M = 700
Thinking for all courses	
Computer Science	
Physics	

One particular Talent Search school-college partnership deserves special attention because of the imaginative way in which it integrates Talent Search course work into the regular school day. This initiative is extensively described by Carol M. McCarthy in the Spring 1988 edition of Talent Development, Northwestern University:

Developed at Kalamazoo College, the Academically Talented Youth Programs (ATYP) provide accelerated math and verbal instruction that is uniquely suited to these seventh through ninth grade students. Because they are highly gifted, these students are usually "out of sync" with school-age peers, school curriculum and the traditional classroom teaching methods. Often these students comprise a math or verbal "group of one" in their own school.

Like most adolescents, these students demonstrate that they learn more when they are taught more. Typically, ATYP students learn two years of high school math content in one-fourth the instructional time that is usually allotted in high school courses. Their expository writing skills are comparable to college freshman standards. The course

content and classroom instructional methods are similar to the classes offered in excellent summer programs for Talent Search Students. The prime difference for ATYP students is the option of utilizing their already committed school time in more appropriate instructional settings.

A collaborative K-12/higher education model makes this regional program possible. Identified through the standard Talent Search process, students in an ATYP class of 15-20 students usually represent ten to fifteen different (both public and non-public) school districts. They are released from their home school for a half day each week to travel to the ATYP classroom, located on the Kalamazoo College campus. Instructors, all master teachers and "passionate" about their subject matter, come from both college and high school math and English faculty. Through weekly 2 1/2 hour classes, combined with noteworthy homework assignments, these seventh through ninth grade students move through high school mathematics and expository writing curriculum at an accelerated pace, and in greater depth.

This regional cooperative model has worked through several obstacles common to gifted education programs and demonstrates several unique factors:

-Traditional high school curriculum, rather than "enrichment curriculum is utilized;

-School districts agree to:

- release students during the school day to attend class
- accept ATYP classes in lieu of in-school comparable math and/or English classes
- grant credit for demonstrated mastery of content
- provide documentation for ATYP on the high school transcript;

-Area colleges (Western Michigan University and Kalamazoo College) recognize ATYP course work and admit "ATYP graduates" for college course work and credit;

-Most school districts and the Kalamazoo Consortium for Higher Education (area colleges and university) share financial costs.

-Parents organize car-pools to provide transportation to and from classes

Michigan and the State Legislature:

To underscore and ensure the quality of academic preparation among its precollegiate youth—especially its college-bound and brightest citizens—the Michigan Legislature is currently pursuing a three-bill package that would require not later than the start of the 1989-90 school year, the Boards of all school districts throughout the state to make available to all pupils attending public school in a respective district a core curriculum, to require school districts to develop school improvement programs, and, to require school districts to issue annual reports that would include district-wide test scores, dropout data and enrollment information.

The core curriculum would consist of required and elective courses in all of the following areas:

- Career Education
- Communication Skills
- Computer Science
- Foreign Language
- Health and Physical Education
- Mathematics
- Science
- Social Studies
- Visual and Performing Arts
- Vocational Education

An important feature of the bill for a core curriculum—Senate Bill 547—is the statute superseding the power of a local school district to deny students the right to take certain classes—especially as it infringes upon the education of bright students. Michigan State Senator Dan DeGrow, R-Port Huron, comments in The Lansing State Journal, ("Senate OKs Core Studies for Schools," by Chris Andrews) that "local control shouldn't be about the right to say to the student, `You can't have a foreign language and advanced science and math class.'"

The path for the educational quality package was cleared in early March 1988 when the Michigan Senate agreed on a plan to change funding of public schools. The financing resolution is a proposed constitutional amendment to cut property taxes and boost the state sales tax from 4 cents a dollar to 6 cents a dollar. Such a measure it is calculated would generate $300 million for education, enough to ensure that the new requirements are funded.

Because the quality bills are tied to the funding resolution, they won't take effect unless the financing proposal is approved by Michigan voters. The Senate rejected several attempts to water-down the core curriculum bill by excluding some small districts, out-of-formula districts and districts already performing well on Michigan Education Assessment Program tests. Having been approved overwhelmingly by the State Senate in early March, the three package bill now goes to the House where resolution is expected by May 1, 1988.

SECTION FOUR
THE WISCONSIN "BRAIN DRAIN"--HOW SIGNIFICANT?

Persistently, one hears in Wisconsin questions regarding the "brain drain"—the flight of the state's best students to higher education in other states. Often, these students do not return as mature adults to engage decisively in Wisconsin's social and economic future. There also are accusations that the University of Wisconsin System does not effectively recruit and retain Wisconsin's best high school graduates.

At the September, 1987, meeting of the Education Committee of The University of Wisconsin Board of Regents, discussion focused on a report which indicated that many of Wisconsin's top high school graduates are pursuing their higher education in other states.

Initial data is suggestive:

- A review of 1985-86 American College Testing program (ACT) examined scores for 1985 Wisconsin ACT-tested graduates who earned an ACT-composite score of 24 or more -- in the upper 25%. Fewer than 22% of students with scores of 24-28 leave the state. By contrast, 27% of students with scores of 29, 31% of students with scores of 30, 32% of students with scores of 31, and 42% of students with scores of 32 leave the state.

- A review of the applications of the 106 student recipients of the 1987 Wisconsin All-state Academic Scholars award, including $1,500 Robert C. Byrd Scholarship, revealed the following information concerning the institutions they listed as their first choice to attend:

  . 27 enrolled at UW-Madison

  . 12 selected a UW System institution other than UW-Madison

  . 12 listed a Wisconsin independent institution

  . 54 chose an institution outside of Wisconsin, and of the 30 students originally describing their choice as "undecided," 28 enrolled out of state.

--The number of National Merit Finalists listing UW-Madison, a Merit Scholarship sponsor until 1974, as their first choice has declined dramatically. The numbers from 1983 through 1987 are 102, 79, 88, 65, and 56.

To combat this perceived "brain drain," the UW Regents instituted in 1987 a privately funded scholarship program to attract students solely on the basis of merit. The reasoning was:

--all college students benefit from having academically gifted classmates;

--academically talented students should be encouraged to pursue their college education in colleges and universities in their home states;

--it is in the public interest to recognize academic achievement in high school and provide incentives for continued scholarship in college;

--the social, cultural, and economic climate and development of the state is stimulated and enhanced if it retains its most talented citizens; and

--college graduates are more likely to remain in their home state if they complete their baccalaureate degree in the state.

Systematic examination of this issue has not gone unattended in the history of Wisconsin education. For example, in 1969 and 1970, UW Professors Philip A. Perrone and L. Joseph Lins conducted surveys and issued several reports examining the post high school plans of the 1968 graduating high school seniors. The original survey was entitled "The Wisconsin Senior Survey. The surveys and reports sought to determine the proportion of Wisconsin students planning to attend some form of post-high school training, to evaluate the circumstances and conditions which encouraged or discouraged continuing education beyond high school, and to evaluate the consistency of the seniors' stated plans by comparing those plans with their actual post-high school activities. The post-high school activities of the 1968 graduates are studied in relation to high school performance and family background variables.

The procedures followed in obtaining the original 1968 population of high school seniors are detailed in L. J. Lins, Post-Secondary Educational Preferences of High School Seniors (Madison: Coordinating Council for Higher Education, June 1969, pp. xiii + 97). The 1968 Senior Survey consisted of 57,349 completed questionnaires which represented 86.2 percent of seniors enrolled in Wisconsin private and public schools. The analyses for that report were based on a one-in-six sample of the 57,349 respondents stratified by high school attendance.

A study entitled "High School Graduation—Then What?" (Wisconsin School News, September 1971, pp 5-9) reports a continuation of the original Wisconsin Senior Survey. The sample for this report consists of a random sample of half of the sample used in the original report. A questionnaire was developed to obtain information about the 1968 Wisconsin high school seniors' post-secondary activities. A second, and shorter questionnaire was sent to the parents of persons in the sample who did not respond. The total number of graduates for whom follow-up information was obtained (3,742) represents 83 percent of the 4,521 to whom questionnaires were sent. Incomplete information from 36 persons reduced the number of usable respondents to 3,706—1,855 males and 1,851 females. The usable sample thus consists of 50.1 percent men and 49.9 percent women, whereas the sample from which they were drawn consisted of 50.7 percent men and 49.3 percent women.

The original Lins study, and that of Perrone and Lins, offer similar and revealing commentary upon the "brain drain" issue (the Lins study examines college attendance expectation among high school seniors; the Perrone/Lins study examines actual attendance one year after).

The proportion of college attendees by type of institution the year after graduation is quite similar to the proportions as anticipated as seniors; they are as follows:

Expectation/Actual

Type of Institution	Expectation/Seniors	Actual Attendance
Out-of-State	11.1	9.9
University of WI	20.3	21.2
WI State Universities	34.9	35.4
Vocational-Technical	18.9	17.3
County Teachers Colleges	0.5	0.7
WI Private	14.31	5.5
	100.0	100.0

As can be seen from the above data, "Out-of-State" university attendance comprised a mere 9.9 percent of the higher education activity of 1968 Wisconsin secondary school graduates and the only two categories where there was a decrease in percentage of involvement between expectation and reality was that of "Out-of-State" (11.l to 9.9) and "Vocational-Technical." All other categories witnessed increase. In 1968, therefore, a small percentage of seniors attended college out-of-state; what is not clear, however, is whether the 9.9% so doing represented the most accomplished secondary school graduates. Were this the case, a "brain drain" would most certainly have existed.

Twenty years following the extensive examination of the graduate class of 1968, Philip A. Perrone has initiated a new study to survey Wisconsin's 1988 top high school graduates. In contrast to the earlier 1968 investigations, the current survey is more clearly directed to determining the "brain drain" among Wisconsin's most accomplished high school graduates. 1987 seniors in all public and private high schools in Wisconsin were surveyed. In the 87 high schools with graduating classes numbering in excess of 275, the director of guidance was asked to have the following students complete and return the questionnaire to their counselors: five highest ranking seniors and ties, any National Merit Finalists or Semi-finalists, and any State Scholar Nominees not among the top five. In high schools with more than 10% minority students, the director of guidance was asked to have the top two minority students complete the questionnaire if they were not among the top five graduates. In high schools with less than 275 graduates, which included all the private high schools, only the top two graduates and ties were asked to complete the questionnaire, along with Merit and State Scholar Nominees not among the top two. The total number of small schools was 426 including the 69 private high schools.

The survey objectives were three-fold:

1. To determine where the highest achieving and highest test performers planned to go to college, when they decided, and what influenced their decision.

2. To determine students' estimates of college costs and how they intend to meet these costs.

3. To determine what these students attribute their academic success to and ascertain the extent of their extra-curricular activity and part-time work.

Results of this survey are not yet available. One must wait to determine fully the reality and scope of the Wisconsin "brain drain" until this study is published.

Through merit-based scholarship aid, therefore, the University of Wisconsin System is attempting to curb a perceived external "brain drain"—talented high school graduates leaving the state for university study. While this action is positive, the position taken in this presentation is that the system's effort is a response to only a small and perhaps most superficial portion of the full "brain drain" issue in Wisconsin. The state is threatened by a more fundamental and deep-rooted "brain drain," one of which Wisconsin appears unknowing or unwilling to face head on. That threat is an internal "brain drain," occurring much earlier than university study and systematically restricting a high proportion of Wisconsin's bright and talented children and youth to the unspent development of their talents and abilities. By the time university study is a possibility, the damage has already been done. Through lack of directed and sustained attention at the precollegiate level of education the maximum number of bright youth who could potentially contribute to the enhancement of the social, cultural and economical climate and development of the state and who could become its most talented citizens (another premise cited by the University of Wisconsin System in apprising the "brain drain" issue), are already rendered unprepared for the challenges they will face.

REFERENCES

Andrews, Chris. "Senate OKs core studies for school" in Lansing State Journal. March, 1988.

Benbow, C.D. and Stanley, J.C. (1983). "Academic Precocity: Its development, consequences and nurturance." Baltimore, Md.: The Johns Hopkins University Press.

Gilbert, Craig and Jones, Richard P. (1987). "University brings students up to speed on the basics." in The Milwaukee Journal. December 13, 1987.

Houseman, Woody. (Ed.) (1987). The 1987 State of the States Gifted and Talented Education Report. Manhattan, Kansas: Council of State Directors.

Hurley, Bill. "Remedial courses defended at UWM." in The Milwaukee Sentinel. December 12, 1987.

Hurley, Bill. "57% of UWM freshmen took remedial courses for no credit." in The Milwaukee Sentinel. December 11, 1987.

Lins, L.J. Post-Secondary Educational Preferences of High School Juniors. Madison, Wisconsin: Coordinating Council for Higher Education. June, 1969

McCarthy, Carol M. "Academically Talented Youth Programs (ATVP)."Talent Development. Evanston, Illinois: Midwest Talent Search. Spring, 1988.

O'Connell, Stephen. Our Neighbor's Kids: Some Experiences encountered in setting up an Advanced Placement Program in three small rural high schools." New York, NY: The College Board.

Perrone, P. and Lins, L.J. "High School Graduation --- Then What?" Madison, Wisconsin: Wisconsin School News, September 1971. pp. 5-9.

Phelps, Wilimina. Our Neighbor's Kids: Some experiences encountered in setting up an Advanced Placement Program in a small school. New York, NY: The College Board.

Trani, Eugene P. Memorandum: "University of Wisconsin Scholarships and Accompanying Appendices." University of Wisconsin System, Madison. Sept. 30, 1987.

Willis, Gordon. Center for Talent Development 1987 Midwest Talent Search: Technical Report. Evanston, Illinois: Midwest Talent Search.

Willis, Gordon B. (1986). Center for Talent Development 1986 Midwest Talent Search: Technical Report. Evanston, Illinois: Midwest Talent Search.

York, A.V. (1988) Correspondence Exhibit A: "ACT Summary Statistics on Midwest Region States - 1985-86-87" and Exhibit B: "Mean ACT Scores for High School Juniors In Midwestern States, 1986 and 1987."

(1979). Advanced Placement English Courses through Tutorials (Individual or Small Groups). New York, NY: The College Board.

(1987). 1987 Advanced Placement Program: National and Wisconsin Summary Reports. New York, NY.

(1987) AP Yearbook 1987. Advanced Placement Program. New York, NY: The College Board.

(1987). "Blueprint for Action" and High School Incentive Program. Lansing, Michigan: Michigan Department of Education.

(1988). The College Handbook: 1987-88. New York, NY: College Entrance Examination Board.

(1987). Educational Program Guide, 1987. Northwestern University, Center for Talent Development, Midwest Talent Search: Evanston, Illinois.

(1987). Guide to the National Merit Scholarship Program. National Merit Scholarship Corporation: Exam. Evanston, Illinois: National Merit Scholarship Corporation.

(1987). Illinois' Investment: 1986-1987 Annual Report. Aurora, Illinois: Illinois Mathematics and Science Academy.

(1986). Moving Beyond Minimum Education Standards: Opportunities for Action in the SREB States. Atlanta, Georgia: Southern Regional Education Board.

(1983). A Nation At Risk: The Imperative for Educational Reform. Washington, D.C.: The National Commission on Excellence in Education.

(1986). Postsecondary Enrollment Options Act Guidelines. St. Paul, Minnesota: Minnesota Department of Education.

(1987). Press Release and accompanying data - National Scores on SAT Show little Chance in 1987. New Data on Student Academic Backgrounds Available. New York, NY: The College Board.

(1987). PSAT/NMSQT Student Bulletin. New York, NY: College Entrance Examination Board.

(1987). PSAT/NMSQT Summary Report: National, Regional and State Data for College Bound Juniors - Wisconsin. New York, NY: College Entrance Examination Board.

(1987). Registration Bulletin 1987-1988: SAT and Achievement Tests. New York, NY: The College Board.

(1987). Summary Document (Nov. 19,1987) : University of Wisconsin System Scholarship Program. Education Committee, Board of Regents.

(1987). School Report of 1987 Advanced Placement Examination By State and College Report of 1987 Advanced Placement Examinations by State. Advanced Placement Program. New York, NY: The College Board.

(1988). State Education Statistics Supplement: Student Performance and Resource Inputs, 1986 and 1987. Prepared by the U.S. Department of Education Office of Planning, Budget and Evaluation.

(1988). State Education Statistics: Student Performance, Resource Input, State Reforms, and Population Characteristics, 1982 and 1987. Prepared by the U.S. Department of Education Office of Planning, Budget and Evaluation.

State SAT Scores: 1976 through 1985. Admissions Testing Programs. New York, NY: The College Board.

(1988). The Wisconsin Citizen Survey. Gordon S. Black Corporation. Wisconsin Policy Research Institute, Inc.: Milwaukee, Wisconsin. pp. 3025, 3026, 3040, 3041.

ABOUT THE INSTITUTE

The Wisconsin Policy Research Institute is a not-for-profit institute established to study public policy issues affecting the state of Wisconsin.

Under the new federalism, government policy increasingly will be made at the state and local level. These public policy decisions will affect the lives of every citizen in the state of Wisconsin. Our goal is to provide nonpartisan research on key issues that affect citizens living in Wisconsin so that their elected representatives are able to make informed decisions to improve the quality of life and the future of the State.

While the Institute may express points of view on individual issues of public policy, it will do so from its perspective as a nonpartisan institution. It will not affiliate with or advocate on behalf of political candidates or parties.

Our major priority is to improve the accountability of Wisconsin's government. State and local government must be responsive to the citizens of Wisconsin in terms of the programs they devise and the tax money they spend. Accountability should be made available in every major area to which Wisconsin devotes the public's funds.

The agenda for the Institute's activities will direct attention and resources to study the following issues: education; welfare and social services; criminal justice; taxes and spending; and economic development.

We believe that the views of the citizens of Wisconsin should guide the decisions of government officials. To help accomplish this, we will conduct semi-annual public opinion polls that are structured to enable the citizens of Wisconsin to inform government officials about how they view major statewide issues. These polls will be disseminated through the media and be made available to the general public and to the legislative and executive branches of State government. It is essential that elected officials remember that all the programs established and all the money spent comes from the citizens of the State of Wisconsin and is made available through their taxes. Public policy should reflect the real needs and concerns of all the citizens of Wisconsin and not those of specific special interest groups.